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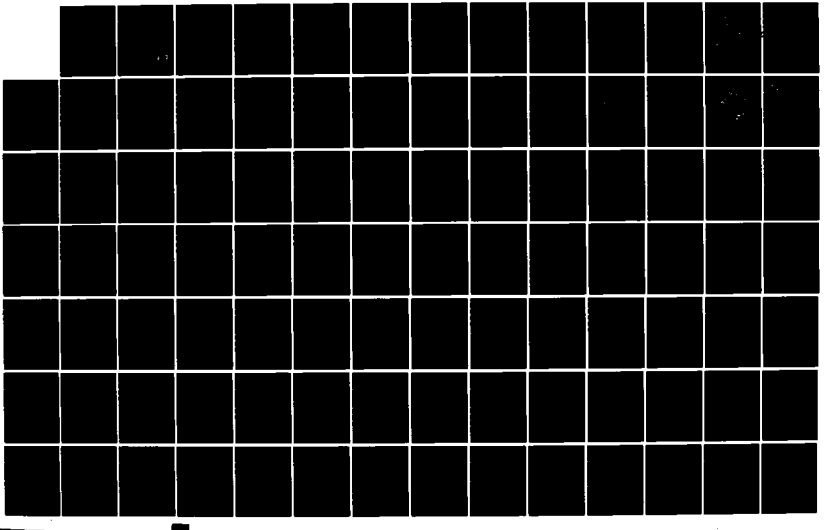

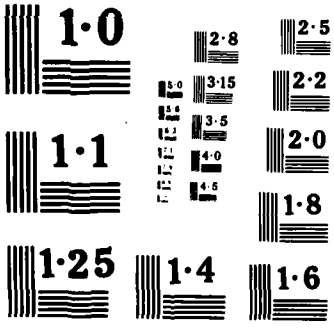
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A CULTURAL RESOURCE RECONNAISSANCE OF TWO PROPOSED BANK UNLOADING AREAS, EAST GRAND FORKS, POLK COUNTY, MINNESOTA

by

Joe Alan Artz
Principal Investigator

Contribution No. 211
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Prepared for:

St. Paul District, U. S. Army Corps of Engineers
1135 U. S. Post Office and Customs House
St. Paul, Minnesota 55101

December 1984

Report prepared in partial fulfillment of a contractual agreement between the St. Paul District, U.S. Army Corps of Engineers and the University of North Dakota (Contract # DACW 37-84-M-1150).

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20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

An archaeological reconnaissance was conducted of 2 proposed bank unloading areas in East Grand Forks, Minnesota. The investigations consisted of a records and literature search and a field reconnaissance combining deep coring, transect testing, and surface survey.

The northern unloading area was part of one of three original homesteads. No architectural or archeological evidence was identified. The southern unloading area includes the former sites of a brewery and a sawmill, both of which were

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associated with significant historic events and themes in the late nineteenth and early twentieth century development of East Grand Forks. Both structures have been razed. A multiple component archeological site, 21PL17, is identified in the South area, including remains of the sawmill foundation, a light density prehistoric component, and a potentially significant twentieth century landfill. The latter deposits may span the interval 1911 to ca. 1930, a time that witnessed social and economic changes in East Grand Forks, including the institution of Prohibition, and the transition of the city from an industrial center, focused on the manufacture and distribution of lumber and liquor, to an agricultural center.

A CULTURAL RESOURCE RECONNAISSANCE OF TWO PROPOSED BANK UNLOADING AREAS, EAST GRAND FORKS, POLK COUNTY, MINNESOTA

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ABSTRACT

An archeological reconnaissance was conducted of two proposed bank unloading areas located in East Grand Forks, Polk County, Minnesota. The investigations consisted of (1) a records and literature search to identify previously recorded cultural resources and to assess the potential for identifying unrecorded resources; and (2) a field reconnaissance combining deep coring, transect testing, and surface survey to identify unrecorded resources.

The northern unloading area (North Area) was part of the property of Leon Suprenant, one of three original homesteaders in the East Grand Forks vicinity. No architectural or archeological evidence definitely linked to Suprenant's tenure were identified. No prehistoric or significant historic cultural resources were identified in the North Area.

The southern unloading area (South Area) includes the former sites of a brewery and a sawmill, both of which were associated with significant historic events and themes in the late nineteenth and early twentieth century development of East Grand Forks. Both structures have been razed. A multiple component archeological site, 21PL17, is identified in the South Area, including remains of the sawmill foundation, a light density prehistoric component, and a potentially significant twentieth century landfill. The latter deposits may span the interval 1911 to ca. 1930, a time that witnessed social and economic changes in East Grand Forks, including the institution of Prohibition, and the transition of the city from an industrial center, focused on the manufacture and distribution of lumber and liquor, to an agricultural center.

ACKNOWLEDGEMENTS

Mr. Dave Mack, Clerk-Treasurer of East Grand Forks, and Mr. Jim King of the East Grand Forks Water and Light Department, were especially helpful in the organizational phases of field work. I also appreciate information generously provided by Robb Boushee, Kenneth Holt, Don Holweger, Eddie Osowski, and Gary Sanders. Special thanks are due the North Dakota Geological Survey, and, in particular, Drs. John Hoganson and Don Halvorson, for providing a drilling rig. Edward Hayden provided excellent assistance in the field and in the library. Ruth Eider was a great help in preparing the draft manuscript. The facilities and services provided by the University of North Dakota are much appreciated.

Finally, I wish to thank the residents and property owners of the Project Areas for their generous cooperation in permitting these investigations.

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CHAPTER 1

MANAGEMENT SUMMARY AND INTRODUCTION

This report conveys the results of an archeological reconnaissance of two tracts of land potentially impacted by a flood control project proposed for East Grand Forks, Polk County, Minnesota. The reconnaissance was undertaken by the Department of Anthropology and Archaeology, University of North Dakota (hereinafter referred to as UND), as part of a contractual agreement (Contract #DACW 37-84-M-1150) with the St. Paul District, U. S. Army Corps of Engineers.

Management Summary

The objectives of the archeological reconnaissance reported here were to identify, investigate, and evaluate cultural resources located within two tracts of land in East Grand Forks, Minnesota, referred to herein as the North and South Areas. Accomplishing these objectives involved the following three tasks. (1) A review of records and literature was conducted to identify previously recorded prehistoric and historic sites in and near the two Project Areas. (2) A field reconnaissance was conducted to search for and investigate unrecorded archeological sites. The reconnaissance employed a combination of deep coring, subsurface transect testing, and surface survey. (3) The results of the investigations were evaluated to determine the significance of the resources encountered, vis a vis their potential eligibility for nomination to the National Register of Historic Places. The impact of the proposed flood control project on these resources was assessed, and recommendations for future management of the resources were developed.

The results of the reconnaissance are as follows. The northern unloading area (North Area) includes land once owned by an early homesteader in the East Grand Forks vicinity. No architectural or archeological remains of this early historic occupation were encountered during field survey. No prehistoric cultural resources were identified. Standing structures in the North Area include residential dwellings the oldest of which was built in 1933. These structures are not considered significant cultural resources vis a vis criteria for National Register eligibility.

Documentary sources identify the southern unloading area (South Area) as including the sites of two important industrial establishments during the late nineteenth and early twentieth centuries. The site of the East Grand Forks Brewery has been destroyed by bridge construction. A small portion of the foundation of the Grand Forks Lumber Company sawmill remains. In addition, portions of the South Area were used by the city of East Grand Forks as a dumping area, perhaps as early as the

1920s. Finally, archeological testing reveals the presence of a relatively low density prehistoric component in the vicinity of the former sawmill and dump. The former site of the Grand Forks Lumber Company sawmill, including the associated dump and prehistoric component, is recorded as archeological site 21PL17. The dump deposits are potentially significant in that they may contain refuse from a period during which East Grand Forks experienced a major transition from an economy based on lumber and brewing to one based on agriculture. Further evaluation of the landfill deposits is recommended prior to impact to conclusively demonstrate their National Register significance.

Report Structure

The preceding section of this chapter summarizes the results and recommendations of the unloading areas reconnaissance. A brief description of the the Project Areas, and the nature of the proposed impact upon them, is presented in the following section of the chapter.

In Chapter 2, background information is presented on the natural environment, prehistory, and Euro-American history of the Red River Valley and the city of East Grand Forks. The procedures and results of the records review and literature search are presented in Chapter 3, and the procedures and results of the archeological reconnaissance are detailed in Chapter 4. Finally, in Chapter 5, the results of the project are evaluated, and recommendations for management and mitigation are provided. Appendices at the end of the report provide copies of project field records.

Project Background

To protect the city of East Grand Forks from the threat of high magnitude floods, the U. S. Army Corps of Engineers has proposed that a system of earthen levees and concrete floodwalls be constructed along the Red River and Red Lake River. The flood protection works would be constructed near the edge of a terrace escarpment that rises ca. 3-5 m (10-16 ft) above the river floodplains.

As part of the project, earth would be excavated from four "unloading areas" located between the levee and the edge of the terrace escarpment, on the river side of the levee. Earth would be removed (i.e., "unloaded") from the areas to a depth of 2.4-4.6 m (8-15 ft). The purpose of bank unloading is to compensate for the added mass of the levee fill. Without removal of a mass of earth equal to that of the levees, the levees would exert sufficient downward pressure to potentially destabilize the terrace edge, resulting in slumping during times of flood.

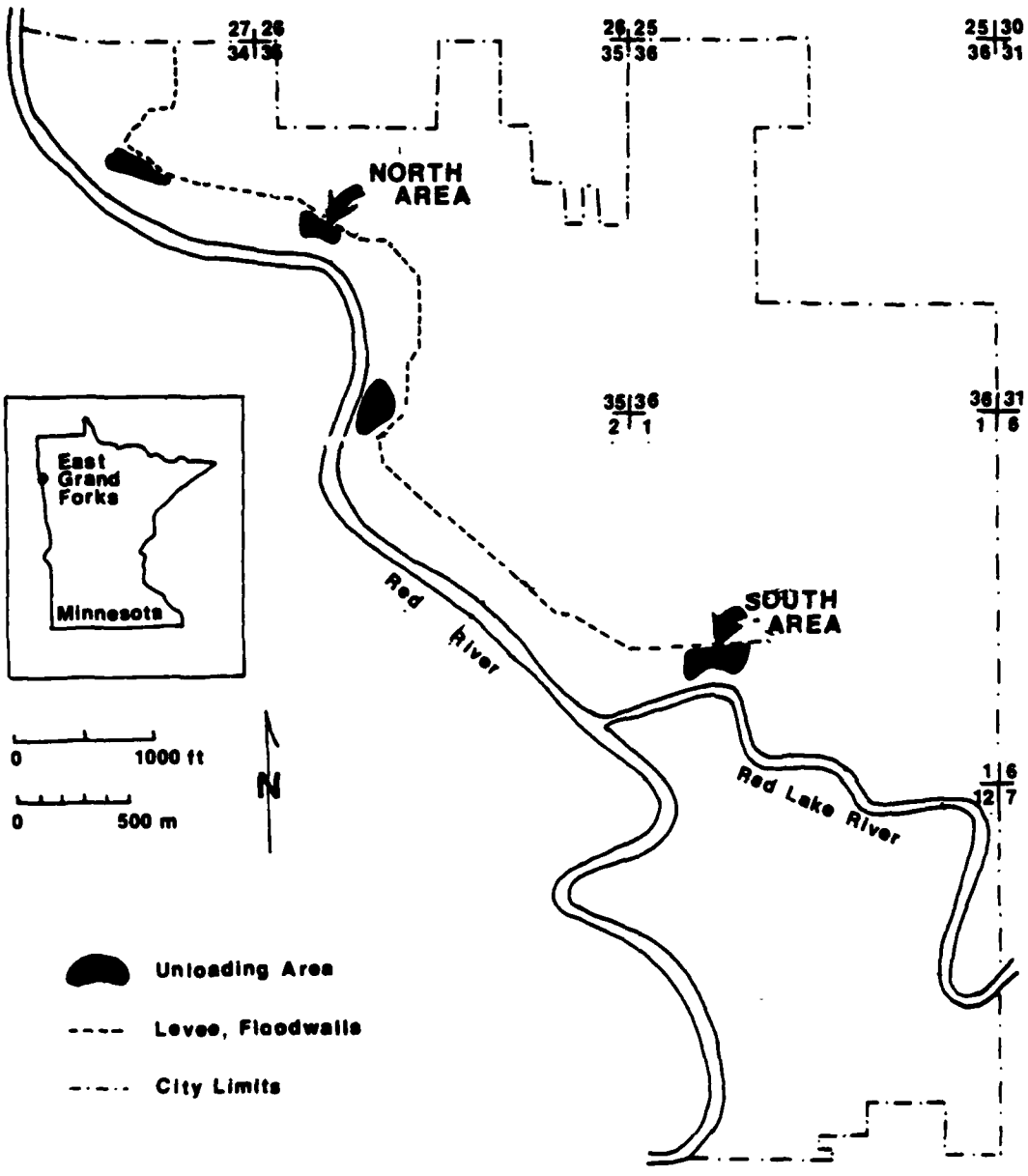

Figure 1. Location of proposed bank unloading areas, levees, and floodwalls in East Grand Forks.

The Corps selected two of the proposed unloading areas as the object of archeological reconnaissance (Figure 1). The two areas were selected on the basis of the extent of previous disturbance and their consequent potential to contain prehistoric or historically significant archeological sites (U.S.C.E., personal communication, 1984).

The two selected areas are here referred to as the North Area and South Area. The North Area encompasses 4.44 ha (10.96 acres), and is located south of Forrest Court and west of River Road, in the northwest part of the city. The South Area encompasses 9.53 ha (23.55 acres). It is located east of Second Avenue NE and south of the alley between Second Street NE and First Street NE. The North Area is on the east side of the Red River of the North; the South Area is on the north side of the Red Lake River (Figure 1).

Curation of Project Records and Materials

On completion of the project, all project field records and photographic negatives were submitted to the St. Paul District, U. S. Army Corps of Engineers. The small collection of artifacts recovered during the reconnaissance is curated at the Department of Anthropology and Archaeology, University of North Dakota.

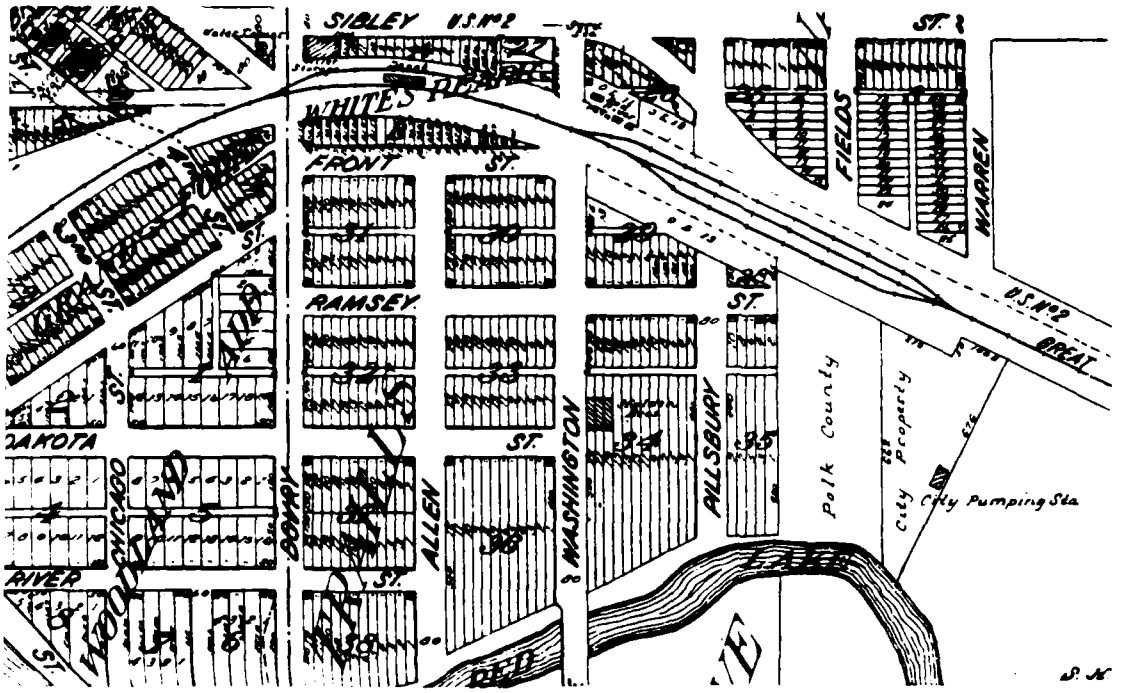

Figure 5. Plat of South Area and vicinity, 1930, showing city and county ownership of sawmill site, and location of Holden Brothers at former site of brewery.

In a city plat dated 1930 (Figure 5), the property once occupied by the Grand Forks Lumber Company is shown as property of Polk County and the City of East Grand Forks. The city has maintained ownership of its part of the former sawmill site. The part owned by the county in 1930 is presently owned by Holweger Excavating Company.

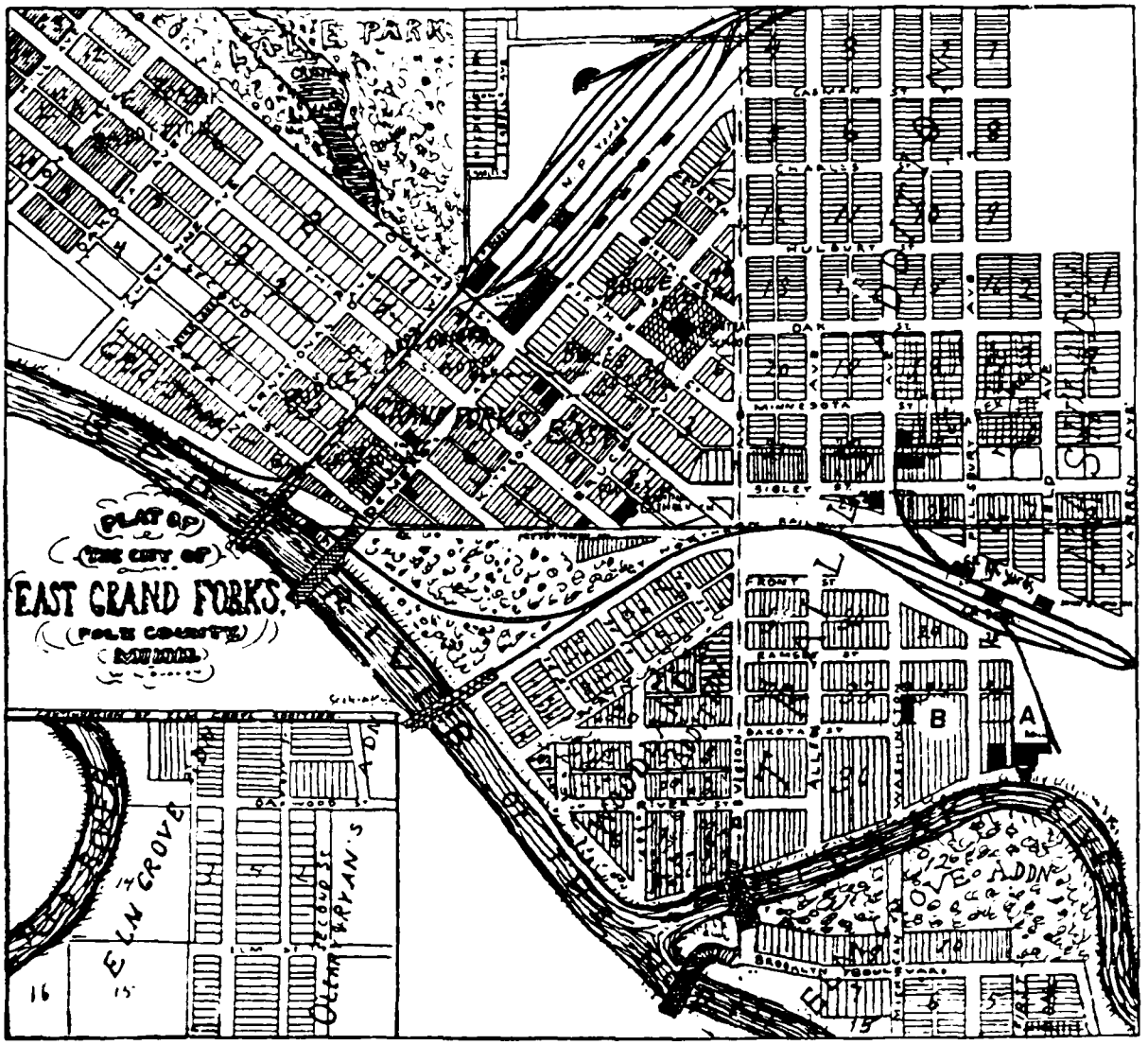

Figure 4. Grand Forks Lumber Company Mills are located at "A." Building at "B" is probably the East Grand Forks Brewery. Source: Anonymous 1901).

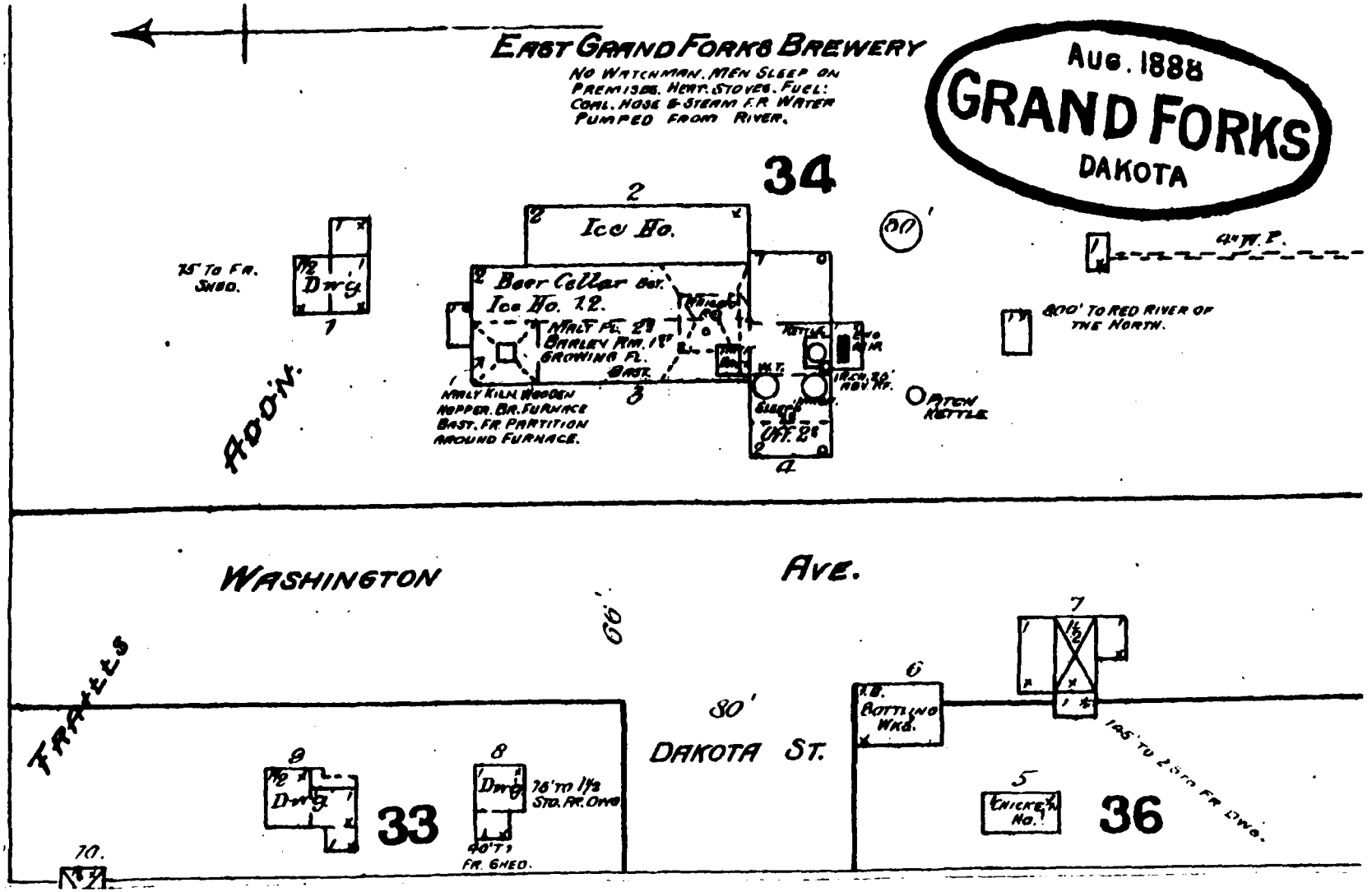

Figure 3. Plan map of East Grand Forks Brewery. Source: Sanborn Insurance Map of Grand Forks, N.D., and East Grand Forks (1888).

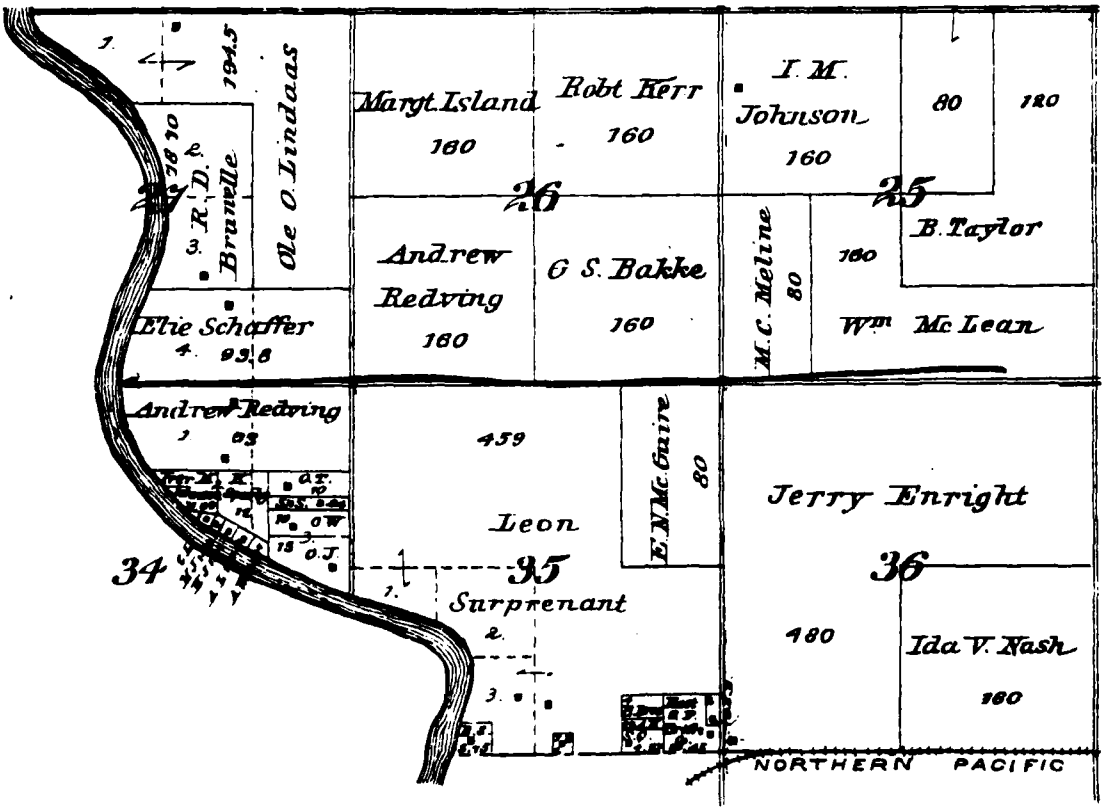

Figure 2. Property titled to Leon Suprenant in 1902. Source: Plat Book of Polk County, Minnesota (1902) (Table 2).

The location of the Grand Forks Lumber Company sawmill is shown in a 1902 county plat book (Table 2) and in a 1901 map of East Grand Forks (Anonymous 1901; see Figure 4). This location is east of Pillsbury Avenue (now Third Avenue NE), on the right (north) bank of the Red Lake River. In the 1902 plat, the lumber company property extends northward about 215 m (700 ft), from the river to the tracks of the Great Northern Railroad. The Grand Forks Lumber Company is listed in city directories for 1909 and 1911, but not in the directory for 1916. According to Vandersluis (1974:257), the use of the Red Lake River for rafting logs ended ca. 1911. The sawmill probably closed soon after this date. The sawmill and associated buildings are described, along with photographs, in pamphlets dated 1901 and 1907 (Anonymous 1901, 1907), and in the Silver Anniversary Edition of the Grand Forks Herald (1904).

North Area

In a 1902 plat map (Figure 2), the North Area is within a 459 acre property titled to Leon Suprenant, one of the first homesteaders in the East Grand Forks vicinity (Chapter 2). The Suprenant property in 1902 included most of Sec. 35, T152N, R50W. As this is the only property in the 1902 platbook titled to Leon Suprenant, it is assumed to include the land he originally homesteaded. However, the actual location of his original claim has not been determined. The 1902 plat shows two houses located on Suprenant's land, one in the SE 1/4, SW1/4, and another in the SW 1/4, SE 1/4 (Figure 2). Both locations are well outside the boundaries of the North Area.

At present, the oldest standing structure in the North Area is the residence of Kenneth Holt, 1623 River Road NW, which was built in 1933. Other standing structures in the North Area include three ranch-style houses, all of which were built after 1950. These four standing structures are not considered of sufficient significance in terms of their age, architecture, or historical associations to warrant nomination to the National Register.

South Area

The South Area includes the sites of the Grand Forks Lumber Company sawmill and the East Grand Forks Brewery. As discussed in Chapter 2, both establishments were associated with significant events and themes in the early economic development of East Grand Forks.

The East Grand Forks Brewery was established in 1886 on the east side of Washington Avenue (now Second Avenue SE), at the intersection of Washington and Dakota Street (now First Street NE). This location is at the western edge of the South Area. In the historical documents consulted (Table 2), the location of the brewery is shown on an 1888 Sanborn Insurance Map (Figure 3), and on a 1901 plat map (Figure 4; Anonymous 1901). The brewery is listed in city directories for 1898, 1909, 1911, and 1916, but not in directories for 1885, 1918, or years thereafter.

In a 1930 city plat (Figure 5), the former brewery building is identified as "Holden Bros." City directories for 1928, 1930, and 1938 identify the Holden Brothers, located at 12 Washington Avenue, as wholesale produce merchants. The documents consulted by the author do not indicate what purpose the former brewery served between 1916 and 1928. Gary Sanders, consulting engineer for the city of East Grand Forks, stated that the brewery building was used as a potato warehouse until 1974, when it was razed to make way for a new bridge across the Red Lake River (personal communication, June, 1984). The former site of the brewery and warehouse is now buried beneath the roadway approaching the bridge.

Table 2. Sources consulted as part of historic documents review.

Atlases and Plat Books	
1888	Sanborn Insurance Map of Grand Forks and East Grand Forks, North Dakota. Sanborn Maps and Publishing Company.
1902	Plat Book of Polk County, Minnesota. Northwest Publishing Company, Minneapolis, Minnesota.
1915	Atlas and Farmer's Directory with Complete Survey in Township Plats of Polk County, Minnesota. Webb Publishing Company, St. Paul, Minnesota.
1930	Standard Atlas of Polk County, Minnesota. Brock and Company, Chicago, Illinois.
City Directories	
1885	Grand Forks and North Dakota Manual for 1885. Published by W. L. Dudley for Plaindealer Book and Job Rooms.
1898	City Directory of Grand Forks, N.D., and East Grand Forks, Minn.. Plaindealer Company, Grand Forks, North Dakota.
1909, 1911, 1914, 1916, 1918, 1919, 1921, 1923, 1925	Grand Forks and East Grand Forks City Directory. Pettibone Directory Company, Fargo, North Dakota.
1928, 1930, 1938	Polk's Grand Forks City Directory, including East Grand Forks. R. L. Polk and Company, St. Paul, Minnesota.

Public Library, and the Grand Forks Public Library. Documentary sources that were consulted included city and township plats, city directories listing businesses and residences, Sanford Insurance maps, and various out-of-print pamphlets of city history (Table 2). Research revealed that both the North and South Areas have been associated with important events in the history of East Grand Forks.

CHAPTER 3

RECORDS AND LITERATURE SEARCH

A records search was undertaken to identify any previously recorded archeological and historic properties in or near the Project Areas. In addition, historic documents were consulted to obtain background information on the Euro-American history of the Project Areas. The procedures and results of these investigations are presented in this chapter.

Records Search

A search of archeological site files maintained at the Minnesota State Historical Society, St. Paul, was conducted at UND's request by Dr. Robert Clouse, Head Archeologist. The search revealed no recorded historic or prehistoric sites in either of the sections occupied by the Project Areas (Sec. 35, T152N, R50W, and Sec. 1, T151N, R50W). The nearest recorded site to the Project Areas is 21PO12, a prehistoric mound site located in Sec. 7, T151N, R49E (Clouse, personal communication, 1984).

The National Register of Historic Places lists no properties within the Project Areas. This determination is based on an examination of the Register as published in the Federal Register (Vol. 44, no. 26, and annual supplements). As of March 1, 1983, the Register lists one property in Polk County, Minnesota. This is St. Peter's Church, in the town of Gentilly, ca. 35 mi east of East Grand Forks. According to Robert Clouse, Minnesota Historical Society, no additional properties in the county have been added or determined eligible for nomination since that date. However, the former Hamm's Beer Depot, a commercial building located in downtown East Grand Forks, is currently under review for nomination. In addition, a recent inventory of standing structures in East Grand Forks, conducted by the Minnesota Historical Society, has identified twelve structures of potential historic significance (Clouse, personal communication, June 7, 1984). None of these structures (including the Hamm's Depot) are within the two Project Areas of concern to this report. However, at least one of the inventoried structures (Whitey's "Wonderbar," 109 DeMers Avenue) would be impacted by the proposed flood control project.

Historic Documents Review

Information on the historic background of the Project Areas was gathered through research in the Special Collections of the Chester Fritz Library at the University of North Dakota, the East Grand Forks

directories listing the addresses of businesses indicate that the brewery remained in operation until 1916 or 1917. In 1907, the brewery employed 26 men and had the capacity to produce 20,000 barrels of beer per year (Anonymous 1907). The brewery was located at the corner of what are now First Street SE and Second Avenue NE, in the South Project Area of concern to this report. The closing of the brewery in 1916 or 1917 coincides closely with the beginning of Prohibition, instituted by constitutional amendment in 1918 (Blegen 1963:477). The temperance movement was undoubtedly influential in the closing of the brewery (Polk County Historical Society 1976:98).

A second major industry in the early years of East Grand Forks was lumbering. By the close of the nineteenth century, the white pine forests of the Mississippi headwaters in central Minnesota were nearly lumbered out (Larson 1949). At the same time, the westward expansion of the railroads accelerated the pace of settlement in the Dakotas. Capitalizing on the demand for building materials on the treeless plains, several lumbermen began acquiring thousands of white pine forest in the headwaters of the Red Red Lake River, around Red Lake. This timber had previously been little exploited, due to the difficulty of transporting it to mills in cities like St. Paul and St. Croix. Timber was rafted down the Red Lake River to Crookston, Grand Forks, and East Grand Forks, where it was cut and sold as lumber.

One lumber entrepreneur, Robert McCoy, founded the Grand Forks Lumber Company in 1899. He built a sawmill on the north bank of the Red Lake River, half a mile above the confluence of the Red and Red Lake Rivers (Vandersluis 1974:217-218). By 1907, McCoy's enterprise had grown to include a sawmill, a planing mill, a large lumberyard near the railroad tracks, stables, and an electric power plant. The entire complex occupied 200 acres and employed 300-350 men (Anonymous 1901, 1907; Grand Forks Herald 1904; Vandersluis 1974:217-218). In 1903, the sawmill burned to the ground, but was rebuilt and placed back in operation within a year (Anonymous 1907; Grand Forks Herald 1904; Vandersluis 1974:218). As the white pine in northern Minnesota declined, so did the lumber industry in East Grand Forks. City directories indicate that the Grand Forks Lumber Company closed sometime between 1911 and 1916.

With the closing of its brewery and sawmill, East Grand Forks was experiencing a transition, from a community supported by brewing and lumbering to a community supported by agriculture. Agriculture remains the economic foundation of the city to the present day. Perhaps symbolic of this transition is the fact that the brewery building was eventually converted into a potato warehouse, while a sprawling plant for processing sugar beets was built near ground once occupied by the Grand Forks Lumber Company.

River Valley. Throughout prehistoric and protohistoric times, various groups have probably used the valley more-or-less contemporaneously (Michlovic 1983:26-29).

Euro-American History

The fur trade was the first Euro-American industry to be established in the Red River Valley, beginning in the 1700s. The rich populations of fur-bearing mammals that were native to the valley were largely trapped out by 1810. The valley, however, remained a center for the trade and transport of furs into the middle 1800s (Murray 1967:15). This era included the development of the Red River oxcart trails, which were major arteries for the transport of furs from outposts on the Red River to St. Paul, on the Mississippi River (Gilman 1979; Murray 1967:15-25).

By 1870, the fur trade had largely declined, and the Red River Valley was being opened to agricultural settlement. The first permanent Euro-American settler in the vicinity of what was to become East Grand Forks was W. C. Nash, who settled in 1869. He was followed in 1871 by Leon Suprenant and Andrew Kimble (Grand Forks Herald 1904:99). Suprenant's farm, and perhaps his original land claim, included the North Area of concern to the present report.

East Grand Forks did not begin to grow rapidly until 1879, when the St. Paul, Minneapolis, and Manitoba Railroad (later renamed the Great Northern) reached the Red River (McLellan 1928:20; Polk County Historical Society 1976:98). The town site was platted and incorporated as East Grand Forks in 1881 (McLellan 1928:14).

By the time East Grand Forks began to grow, the city of Grand Forks, across the Red River in North Dakota, was well established. The necessities of life, therefore, were already provided by the groceries, hardware stores, lumberyards, and other businesses of Grand Forks. Partly for this reason, East Grand Forks tended to attract a disproportionate share of "disreputable enterprises" (McLellan 1928:14), such as saloons, gambling houses, and brothels (Kelsey 1951:268-269). Indeed, businesses involved in the manufacture, wholesale, and retail of alcoholic beverages were important factors in the economic development of the city during the late 1800s and early 1900s. In 1904, for instance, East Grand Forks boasted:

> "one large local brewery, seven branch houses of eastern brewers with local cold storage plants, . . . several wholesale liquor houses and about thirty saloons . . . ." (Grand Forks Herald 1904:99).

The East Grand Forks Brewery, the "local brewery" referred to above, was established in 1886 by Thomas White and Robert Jarvis. City

interests in the valley have tended, until recently, to focus disproportionate amounts of effort on a single aspect of the archeological record, namely, on the numerous prehistoric burial mounds that occur in and adjacent to the lake plain (cf. Johnson 1973; Wilford 1970). However, systematic surveys and excavation programs, such as those conducted by Michlovic in Clay and Norman counties, Minnesota (Michlovic 1978, 1983; Minnesota Historical Society 1981:28-31), and by the University of North Dakota in Walsh County, North Dakota (Cole 1968; Loendorf and Good 1974; Toom 1984), have begun to provide a more complete picture of the archeology and prehistory of the Red River Valley.

A Paleo-Indian presence prior to 10,000 B.P. is represented by a few surface finds of Folsom fluted points (Johnson 1962:161-162). However, the first significant human use of the Red River Valley appears to have been by Late Paleo-Indian, Plano groups (ca. 8000-7000 B.P.) (Michlovic 1978). Not surprisingly, the Plano presence immediately postdates the final draining of Lake Agassiz during the Nipigon phase (9500-8000 B.P.).

Archaic occupations of the valley are indicated by a variety of notched, eared, and indented base point forms. The most common Archaic point forms are the Oxbow and Parkdale Eared types, which have estimated ages of ca. 5000-3000 B.P. (Michlovic 1978:8-9). Occasional tools and ornaments of copper may reflect influences from the Archaic-age, Old Copper complexes of the upper midwest (Johnson 1962; Michlovic 1978:6-7).

The introduction of ceramics and of mortuary mounds, probably beginning by 2500 B.P., marks the transition to the Woodland period. The Woodland mortuary complexes are perhaps the most extensively investigated aspects of Red River Valley prehistory (cf. Johnson 1973; Syms 1984; Wilford 1970).

The post-Archaic prehistory of the Red River Valley is quite complicated, and apparently reflects the use of the region by groups from both the plains to the west and the lake-forest country to the east (Michlovic 1983). A diverse assortment of ceramics is represented in artifact collections from sites in the valley, including Blackduck, St. Croix, Kathio, Sandy Lake, and Oneota-like wares (Michlovic 1978:11-13, 1983:25-26). The presence of, or contacts with, plains groups is indicated by high frequencies of Knife River flint, a chipped stone raw material derived from western North Dakota, and by projectile point forms considered characteristic of Pelican Lake and Besant groups (Michlovic 1978:10; 1983:24-25).

During protohistoric and historic times, the Red River Valley was frequented by many culturally diverse Native American groups, including the Dakota, Chippewa, Cheyenne, Cree, and Assiniboine (Michlovic 1983:26-27). It is reasonable to postulate that no single cultural group, prior to Euro-American settlement, ever wholly dominated the Red

Unit 10, as defined by Arndt (1977), is equivalent to Unit 1 of Moran (1972) and the Walsh Formation of Bluemle (1973). As used by these authors, Unit 10 is primarily alluvial in origin, but also includes topsoil horizons, eolian sediment, and Euro-American landfill. Pedogenic accumulations of organic matter and the absence or weak development of laminations are characteristic of the unit. Moran (1972:7) and Bluemle (1973:6) note an abundance of bison bone in deposits of Holocene alluvium in the lake plain. The deposits are generally silty clay or silty clay loam; colors are generally black, dark brown, or gray (Arndt 1977:10; Moran 1972:7). In the vicinity of Grand Forks and East Grand Forks, documented thicknesses of Unit 10 range from 1.5 to 2.7 m (5-9 ft) (Arndt 1977), excepth beneath the floodplain of the Red River, where the unit is up to 7.6 m (25 ft) thick (Moran 1972).

Sherack Formation

The Sherack Formation is formally defined by Harris et al. (1974) on the basis of deep cores and stream bank exposures in the Grand Forks vicinity. Arndt (1977), Harris (1975), and Sackreiter (1975) trace the formation over a large area of the Red River Valley. The formation was deposited during the Emerson phase of Lake Agassiz (ca. 9900-9500 B.P.). Sediments of the Sherack Formation consist of

> "laminated clay, silty clay, and silt with minor amounts of sand. . . . The laminations are generally only a few millimeters thick, but some of the silt-beds are locally several centimeters thick" (Harris et al. 1974:26).

The upper portions of the Sherack Formation are oxidized and exhibit yellowish gray to olive brown colors. Unoxidized, lower portions are light gray (Harris et al. 1974:25).

Twenty cores taken by the North Dakota Geological Survey in the vicinity of Grand Forks and East Grand Forks (Arndt 1977; Moran 1972) indicate that the Sherack Formation ranges in thickness from 6.1 to 10.7 m (20-35 ft). Combined thicknesses of Unit 10 and the Sherack Formation range from 8.5 to 11.6 m (28-38 ft) (Arndt 1977:Appendix A). These data are relevant to the present project in that the Corps has proposed to unload banks in the Project Areas to a maximum depth of 4.6 m (15 ft). Thus, only Unit 10 and Sherack Formation sediments will be removed. Archeological deposits are most likely to occur in Unit 10 and are unlikely to occur in lake sediments of the Sherack Formation.

Prehistory and Ethnohistory

The Red River Valley in North Dakota and Minnesota has not to date been the subject of extensive archeological research. Archeological

Table 1. Stratigraphy of glacial Lake Agassiz in the Grand Forks-East Grand Forks vicinity (Arndt 1977; Harris et al. 1974).

Name	Depositional Environment	Range of Thickness (ft)	(m)	Lake Phase, Age (years B.P.)
Unit 10	alluvial, eolian, anthrogenic	1-25	0.3-7.6	Nipigon, post-Nipigon
				----- 9500 -----
Sherack Fm.*	lacustrine	15-30	4.6-9.1	Emerson
				----- 9900 -----
Poplar River Fm. (Harwood Mm.)*	fluvial, marshes	6.0 or less	1.8 or less	Moorhead
				---- 10,900 ----
Brenna Fm.	lacustrine	ca. 150	ca. 45.7	Lockhart
Falconer Fm.	glacial till	ca. 10	ca. 3.0	
				-- ca. 11,700 --
Wylie Fm.	lacustrine	2-7	0.6-2.1	Cass
				-- ca. 11,700 --
Red Lake Falls Fm.	glacial till	15-30	4.6-9.1	Lostwood Glaciation

* Fm. = Formation; Mm. = Member

which focuses primarily on the upper 2.4-4.6 m (8-15 ft) of sediment (i.e., the proposed depth of bank unloading in the two Project Areas). The two uppermost units of the sequence are directly relevant to the present project and are discussed below.

Unit 10

Unit 10 is a term defined by Arndt (1977:4) to describe nonglacial and nonlacustrine sediments that were deposited in the middle and late Holocene, following the end of the Emerson phase. These sediments constitute a relatively thin, discontinuously distributed veneer over the lake plain, and have not been as extensively studied as the underlying Pleistocene and early Holocene lake deposits. Although not of great interest to geologists, Unit 10 is of significance to archeologists, since it is the unit most likely to contain archeological remains.

Small game included cottontail rabbit, snowshoe hare, beaver, and muskrat (Bailey 1926). Waterfowl were attracted to wetland habitats. Fish and mussels were available in streams.

Geology

For purposes of this report, the most relevant aspects of local geology are the geological history and stratigraphy of glacial Lake Agassiz. The thickness of sediments deposited after the draining of the lake is of particular interest, since these sediments have the greatest potential for containing evidence of historic and prehistoric occupation. The geology and paleoecology of Lake Agassiz have been studied for nearly a century. Comprehensive summaries and syntheses of this research are provided by Mayer-Oakes (1967) and Teller and Clayton (1983).

The lake began to form at the close of the Pleistocene, as the retreating late Wisconsinan glaciers exposed the divide between the Mississippi River and Hudson Bay drainages. Meltwater ponded between the ice-front and the divide, and the level of water rose until other, higher outlets were encountered. The lake probably began to form shortly after 12,000-11,500 B.P. (years before present), the estimated date at which the continental divide was exposed (Teller and Clayton 1983:4).

In the Minnesota and North Dakota portions of the lake basin, the geological history of the lake is divided into five phases (Fenton et al. 1983:58-71; see Table 1). The time spans given here for each phase are estimates, following Fenton et al. (1983) and Teller and Clayton (1983:3-5). During the Cass (ca. 11,700 B.P.), Lockhart (ca. 11,700-10,900 B.P.) and Emerson (ca. 9900-9500 B.P.) phases, the level of the lake was high. During these phases, fine-grained lacustrine sediments were deposited offshore in the center of the basin, and beaches were formed along the edges of the basin. During the Moorhead phase (ca. 10,900-9900 B.P.), the lake level dropped, and spruce forests, marshes and sluggish rivers developed on the floor of the basin. As the lake drained during the Nipigon phase, the present day drainage systems were established and soils began to form in the lake sediment. Flooding of rivers, especially during the middle Holocene (ca. 8000-5000 B.P.), spread alluvium over large areas of the lake basin surface (Fenton et al. 1983:72).

The sediments deposited during each phase are described and traced over large areas of the Red River Valley in Minnesota and North Dakota (Arndt 1977; Harris 1975; Harris et al. 1974; Moran 1972; Sackreiter 1975). The total thickness of post-lake and lake sediment in the Grand Forks-East Grand Forks area is ca. 40-43 m (130-140 ft) (Arndt 1977:Plate 1, Appendix A; Harris et al. 1974:15, 38-46). Discussion of the entire sequence (Table 1) is not relevant to the present report,

CHAPTER 2

BACKGROUND INFORMATION

This chapter provides pertinent background information on the physiography, biota, geology, and human history and prehistory of the Project Areas and their environs. Only brief summaries of each topic are presented, with the exception of two sections dealing with geology and Euro-American history. These topics are particularly relevant to the objectives of the present project, and are therefore discussed in greater detail.

Physiography and Relief

The city of East Grand Forks is located at the confluence of the Red River of the North and the Red Lake River, in Polk County, Minnesota. Grand Forks, North Dakota, is on the opposite side of the Red River from East Grand Forks. The cities are situated in the Agassiz Lake Plain district of the Central Lowlands physiographic province (Fenneman 1938). Those portions of the lake plain in North Dakota and Minnesota are commonly referred to as the Red River Valley. The flat surface of the lake plain was formed by sedimentation in glacial Lake Agassiz which, at its maximum extent, covered thousands of square kilometers in North Dakota, Minnesota, Saskatchewan, Ontario, and Manitoba.

Local relief in the lake plain is generally less that one foot, except where dissected by streams. The level surface of the lake plain is poorly drained (Doolittle et al. 1981:4). In the vicinity of East Grand Forks, the most prominent natural relief is that created by the Red River, Red Lake River, and their tributaries. The Red and Red Lake rivers flow ca. 12-15 m (40-50 ft) below the level of the lake plain. In many places, the floodplains of the rivers are separated from the lake plain surface by strongly sloping scarps, ca. 3-5 m (10-16 ft) high.

Biota

The natural vegetation of the lake plain, prior to the inception of Euro-American agriculture, was a tall grass prairie, dominated by big bluestem, switch grass, and Indian grass (Whitman and Wali 1975). Low-lying swales and sloughs supported wetland grasses and sedges. Forests were largely confined to the floodplains of streams. The dominant trees and shrubs were American elm, green ash, boxelder, American basswood, bur oak, eastern cottonwood, and willow (Doolittle et al. 1981:62). Native large game included bison, moose, elk, and white-tailed deer.

CHAPTER 4

ARCHEOLOGICAL RECONNAISSANCE

Field Methods

Archeological field survey was undertaken in two stages. The first stage consisted of drilling to depths of at least 4.6 m (15 ft), the maximum depth of the proposed bank unloading in the Project Areas. The purpose of deep drilling was to prospect for archeological materials, and in the absence of such materials, to minimally determine the depth to which prehistoric materials might be expected in and around the Project Areas. In essence, this involved determining the depth from the surface to the top of the Sherack Formation, the distinctly laminated sediments deposited in glacial Lake Agassiz during the Emerson phase (see Chapter 2, Geology). Truck-mounted drilling rigs provided by the North Dakota Geological Survey and Mr. Kenneth Holt, a construction contractor, were used for these investigations.

The project scope of work specified that the services of a geomorphologist were to be obtained in subsurface reconnaissance of the Project Areas. These services were provided by the author, who has had graduate training and field experience in soil science and geomorphology, and who has prepared numerous reports, articles, and professional papers concerning geoarcheology (e.g., Artz 1979, 1983a, b, c, 1984a, b; Artz and Reid 1984). In addition, Dr. John Hoganson of the North Dakota Geological Survey provided advice on coring procedures and introduced the author to recent literature on the geology of Lake Agassiz.

The second stage of field work consisted of systematic transect testing to prospect for near-surface and shallowly buried archeological deposits in the Project Areas. Probing was conducted at five meter intervals along transects, using a two-handled, "clam-shell" type posthole digger. This tool produced a circular pit, ca. 20 cm in diameter, with a maximum depth of 1.20 m. Transect tests were excavated in levels ca. 20 cm thick, and all soil was screened through 6.35 mm (0.25 in) hardware cloth. Notes were kept describing the soil and cultural materials encountered in each level of the test (Appendix A).

Archeological field work was restricted somewhat in scope due to the fact that both Project Areas are situated in developed urban areas. A logical approach to the reconnaissance would have been to establish a grid of transect tests over the entire surface of each Project Area, testing at regular five or ten meter intervals. The presence in both areas of standing structures, paved areas (sidewalks, driveways, parking lots), and buried utility lines precluded such an approach. In addition, the North Area consists entirely of private residential lots with well-kept lawns. Landowners were not willing to permit excavation

of close-interval grids on their property. Excavations were thus conducted along transects in unobtrusive areas, usually near the edges of lots.

In excavating transect tests, an effort was made to return the tested areas as closely as possible to their original condition. The top five to seven centimeters of sod was cut from each test prior to excavation and replaced after backfilling. Soil was screened onto a large canvas tarpaulin. In one instance, a landowner did not grant permission to excavate until he had assured himself, by watching us work on a neighbor's lot, that the tested areas would be conscientiously restored.

Permission to excavate was obtained from all landowners (Table 3). Mr. David Mack, Clerk-Treasurer of East Grand Forks, was notified of the objectives and intentions of the project. He granted permission to work on lands and easements held by the city. In general, property owners and city officials were quite cooperative. Prior to excavation, utility companies were contacted to check for the location of buried lines. This included contacts with the East Grand Forks Water and Light Departments, the East Grand Fork Sewage Department, Northern States Power Company, Northwestern Bell Telephone, and Grand Forks Cable TV.

Transects were laid out with a transit, stadia rod, and 50 m tape. From the point of origin of each transect (i.e., from the instrument station), bearings and distances were measured to semi-permanent reference points such as utility poles and street intersections. The measurements permitted accurate location of transects on project maps (e.g., Figures 7-8) and provide, if necessary, a means of relocating the transects.

Transect testing was conducted between May 22 and May 30, 1984, by a two person crew consisting of the author and an assistant, Mr. Edward Hayden. Eighty-nine person hours were expended in transect testing.

Results of Deep Coring

South Area

A truck-mounted, rotary auger drilling rig, provided through the courtesy of the North Dakota Geological Survey, was used to extract five cores to depths of 5.3 m (17.5 ft). The locality selected for coring was near the South Area, in a meadow undisturbed by historic landfilling. Coring in the South Area itself was not attempted. The risk of damaging the drilling equipment on buried concrete rubble in landfilled areas was too great.

The location of the deep coring transect is shown in Figure 8. Cores 1 through 4 were drilled beneath the surface of the terrace. Core

Table 3. Private property owners in Project Areas.

Area	Name	Address
North Area	Mr. Ardell Jeffries	1715 River Road NW
	Ms. Gust Hangsleben	1 Forrest Court NW
	Mr. Kenneth Holt	1623 River Road NW
	Mr. J. Toby Westrem	1709 River Road NW
South Area	Mr. Robb Boushee	104 3rd Avenue SE
	Holweger Excavating, Inc. (Mr. Don Holweger, prop.)	409 James Avenue SE
	Spud Bar and Lounge	217 2nd Street N

5 was drilled at the foot of the terrace escarpment, at the edge of the Red Lake River floodplain (Figures 6, 8). Using thin-walled aluminum sampling tubes referred to as Shelby tubes, the drill rig extracted solid cores of sediment, 7.6 cm (3 in) in diameter. These cores were examined in the field and the thickness, color, texture, and sedimentary structure (e.g., bedding planes, laminations) of observed strata were recorded. Representative sections of the core extracted from Core 3 were wrapped in plastic film ("Saran wrap") and transported to the laboratory for a more detailed description (see below).

Deep coring along the transect revealed that the top of the Sherack Formation, the uppermost unit of lake-deposited sediment, is ca. 1.8-2.1 m (6-7 ft) below the surface of the terrace (Figure 6). Core 3, described below, is representative of the strata observed in Cores 1-4.

0-8 cm. Yellowish brown (10YR5/4) silty clay mottled with distinct patches of black (10YR2/1) silty clay; this layer is a mixture of topsoil and subsoil materials and represents recent disturbance, probably back dirt from a water pipeline that passes between Cores 2 and 3.

8-46 cm. Black (10YR2/1) silty clay; homogeneous, unmottled. This is a topsoil horizon developed in Unit 10 sediment.

46-86 cm. Grayish brown (2.5Y5/2) silty clay loam; many, fine, light gray (2.5Y7/0) mottles of calcium carbonate; a subsoil horizon developed in Unit 10 sediment.

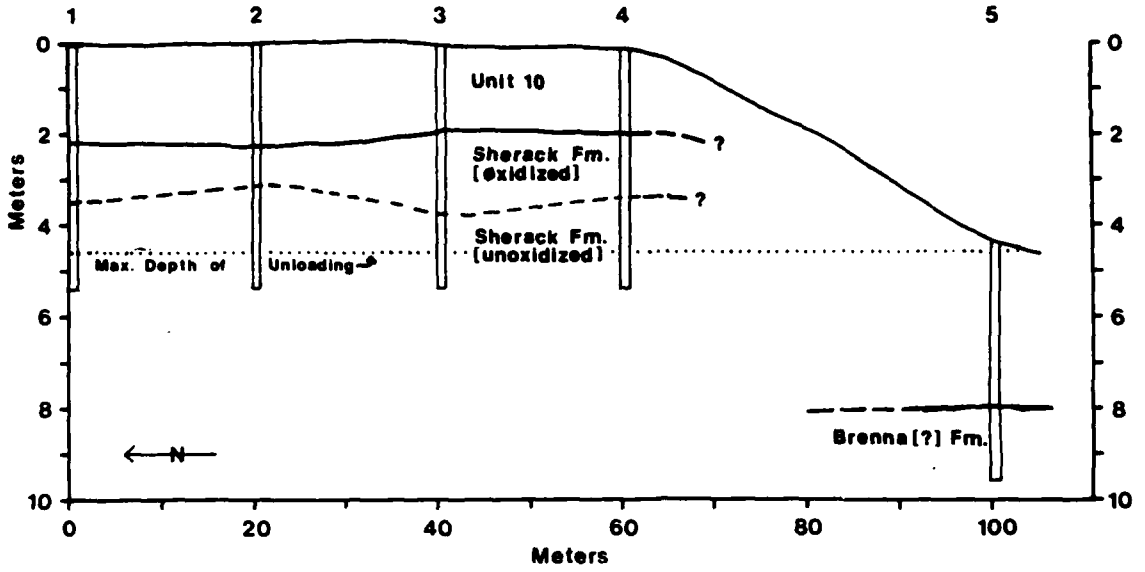

Figure 6. Cross section of sediments in vicinity of South Area, based on deep coring.

86-177 cm. Olive brown (2.5Y4/4) silty clay loam grading with depth to light olive brown (2.5Y5/4) silty clay loam; common, fine, olive yellow (2.5Y6/8) mottles; common, fine, soft masses of light gray (2.5Y7/0) calcium carbonate; a subsoil horizon developed in Unit 10 sediment.

177-375 cm. Alternating, horizontal beds of olive yellow (2.5Y6/6 to 2.5Y6/8) and light gray (2.5Y7/2) silty clay and silt loam; most beds are 1-2 cm thick and are composed of many fine laminations 1-3 mm thick; this is oxidized Sherack Formation sediment.

375-533 cm. Alternating horizontal beds of very dark grayish brown (2.5Y3/2) silty clay, light gray (2.5Y7/0 to 2.5Y7/2) silt loam, and olive yellow (2.5Y6/6 to 2.5Y6/8) silt loam; grayish brown layers are 1-5 cm thick; light gray and olive yellow laminations are generally less than 1 cm thick; common, strong brown (7.5YR5/8) stains of iron oxide; this is similar to unoxidized Sherack Formation sediment.

Core 5, placed at the foot of the terrace (Figures 6, 8), encountered different strata than Cores 1-4. Here, ca. 60-120 cm of recent, disturbed fill overlay cross-bedded silty clays and clays. Colors of the cross-bedded sediments ranged from olive gray (5Y5/2) to olive (5Y5/3 and 5Y5/4). Since cross-bedded sediment is not characteristic of the Sherack Formation (cf. Arndt 1977; Harris et al. 1974), the deposits in Core 5 may be more recent alluvial or colluvial

deposits. About 3.65 m (12 ft) below surface in Core 5, there was an abrupt change to a dark gray (5Y4/1), stiff clay with occasional laminations. The origin and extent of this stratum is not known, but it is similar to sediments of the Brenna Formation, a unit deposited in glacial Lake Agassiz during the Lockhart phase (ca. 11,700-10,400 B.P.) (cf. Arndt 1977:8-9). If this interpretation is correct, then the Sherack Formation is probably no more than 5-6 m (16-20 ft) thick in the vicinity of the South Area.

North Area

Deep coring in the North Area was restricted to a single test hole, drilled on the property of Kenneth Holt (Figure 7). Landowners in the North Area were not willing to allow extensive drilling on their well-kept lawns. The test hole was drilled by Kenneth Holt, a private construction contractor, using a 30 cm (12 in) diameter, truck-mounted, rotary auger. Holt's apparatus, more commonly used to dig holes for utility poles, did not extract cores. However, having completed the South Area coring transect, it was relatively easy to detect the top of the laminated, olive and gray sediments of the Sherack Formation. The top of the Sherack Formation was encountered at 1.4-1.5 m (4.5-5.0 ft) in the test hole, and continued to a depth of at least 4.0 m (13 ft), the maximum depth obtainable with Holt's auger.

In addition to machine coring, weak laminations were observed in the lower 10 cm (120-130 cm below surface) of transect test 1-11 in the North Area (Appendix A). This stratum probably is the top of the Sherack Formation in this portion of the North Area.

The results of deep coring indicate that the Sherack Formation is nearer the surface in the North Area than the South Area. The depth to the Sherack Formation in both areas is well within the range of depths expected, based on geological drilling in the Grand Forks-East Grand Forks vicinity (Arndt 1977; Harris et al. 1974; Moran 1972).

Results of Transect Testing

North Area

Thirty-six tests were excavated along four transects in the North Area (Figure 7). Transects are numbered in the order of their excavation. Tests are numbered sequentially along each transect from east to west. Tests are designated by transect and test number. For example, Tr 1-6 refers to the sixth test excavated on Transect 1 in the North Area.

Transect 1 consists of 16 tests excavated along the northern boundary of the Holt property. All tests encountered undisturbed

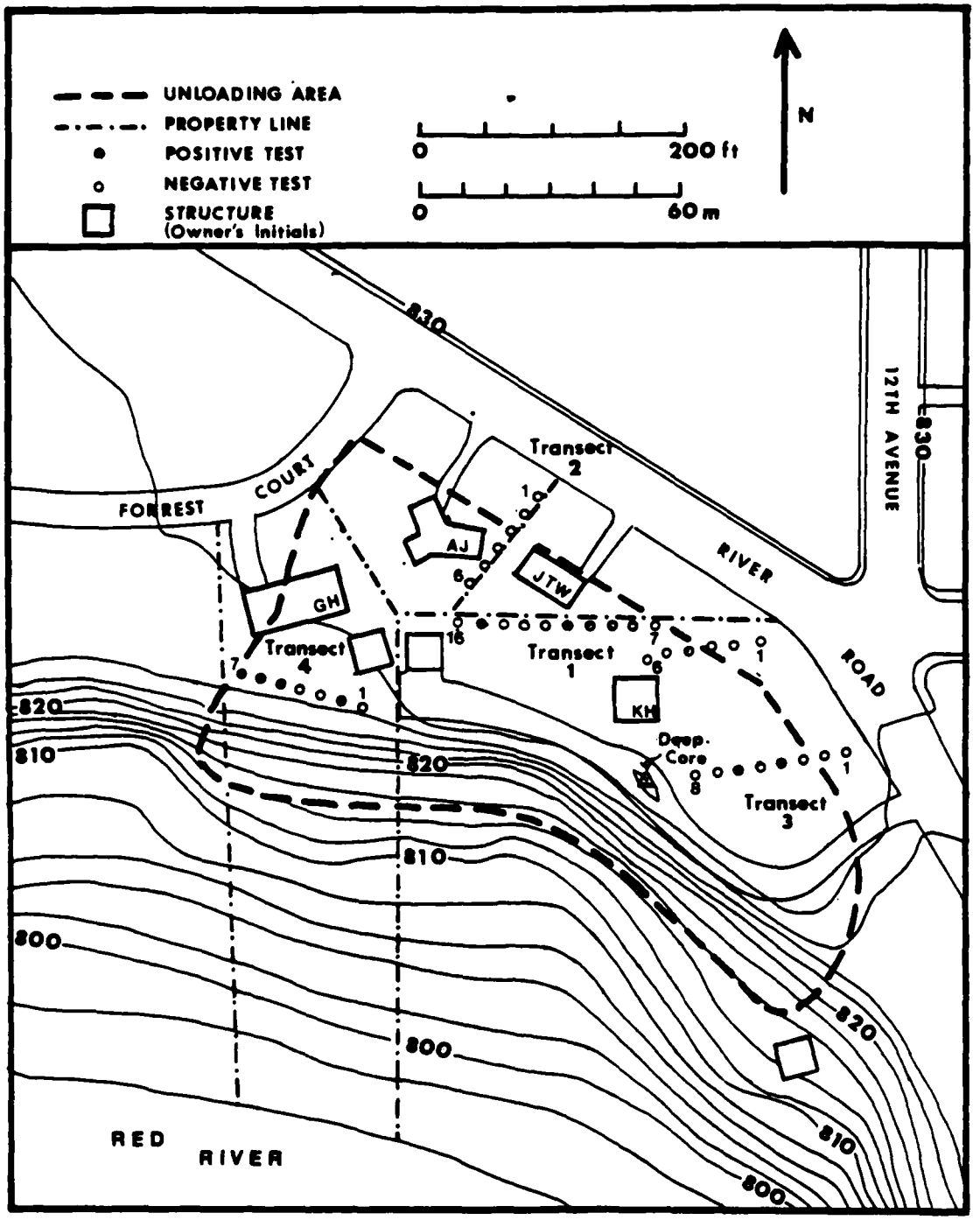

Figure 7. Map of North Area. Source: U.S.C.E., 1:200, 2 ft contour interval, project maps.

natural soil profiles, except for Tr 1-16. This test encountered a mucky, mottled fill probably resulting from the filling of a natural landscape depression or channel.

Transect 2 was excavated along the boundary separating the Jeffries and Westrem properties. Tr 2-1, 2-2, and 2-3, nearest the street, encountered undisturbed soil. Tr 2-4, 2-5, and 2-6 were excavated about midway between the Jeffries and Westrem houses. The upper 50-75 cm of these tests was a mottled mixture of subsoil and topsoil, which is most likely a fill derived from the excavation of the house basements, subsequently used for banking and landscaping. The black, silty clay topsoil of the original terrace surface was encountered at the base of these tests.

Transect 3 was excavated on the Holt property, parallel to and ca. 33 m south of Transect 1. Undisturbed soil profiles were encountered in the eight tests excavated along the transect.

Transect 4 was excavated near the edge of the terrace escarpment on the Hangsleben property. At Tr 4-1, there is at least 100 cm of mottled landfill. The test was probably placed on or near the backfilled trench of a buried storm sewer line which parallels Hangsleben's eastern property line. The remaining tests encountered relatively undisturbed soil, although the upper 20-30 cm of Tr 4-5, Tr 4-6, and Tr 4-7 was a mottled, historic fill.

The undisturbed natural soil profile of the North Area, encountered in 29 of the 36 tests, consists in general of three soil horizons. The A horizon (topsoil) is a deep (50-60 cm thick), black (10YR2/1) to very dark gray (10YR3/1) silt loam. This horizon grades to a gleyed, mottled B1 horizon, 20-30 cm thick, that is a dark grayish brown (2.5Y4/2) to grayish brown (2.5Y5/2) silty clay loam. This is underlain by a B2 horizon that is a yellowish brown (2.5Y5/4) to olive brown (2.5Y6/6) silt loam (see Appendix A).

Artifacts were recovered from 8 of the 36 tests (Table 4). No artifacts were recovered from Transect 2. The greatest quantities of artifacts were recovered from the 20-30 cm thick landfill stratum of Tr 4-5, 4-6, and 4-7. This stratum yielded plate glass, concrete, hewn wood, charcoal, brick, burned earth, and bone. Taken as an aggregate, these materials suggest a fairly recent (i.e., post 1930-1950) trash dumping or landfilling episode, and do not warrant recording as a site.

Pre-1930 artifacts were recovered on the Holt property. A two-hole button made of mussel shell was recovered from Tr 1-15. A square, machine cut nail was recovered from Tr 3-6. These artifacts may reflect the historically documented late 19th and early 20th century occupation of the area (i.e., the Leon Suprenant farm, see Chapter 3). Structural remains of this era, however, are not present on the property; the Holt residence was built in 1933. Pieces of glass and wire of recent age were encountered in Tr 1-11 and Tr 3-4.

Table 4. Inventory of cultural material from transect tests.

Transect	Core	Depth (cm)	No.	Weight (gm)	Description
South Area					
1	1	0-20	1	15.1	Metal
1	1	20-40	1	7.4	Metal
			1	5.7	Slag, Coal
			1	1.0	Metal Frag.
			2	1.8	Burned Earth
			1	1.4	Unburned Bone
			1	0.9	Unidentified
1	2	0-20	1	2.0	Metal
			1	1.3	Glass
1	2	25-35	1	118.5	Deer Skull Frag.
1	2	40-60	1	0.9	Chalcedony Flake
			4	1.6	Bone
			1	2.6	Metal
			1	0.1	Burned earth
1	2	60-80	1	4.4	Quartzite
			4	1.5	Bone
			1	2.0	Glass
1	2.5	0-20	2	1.9	Metal
1	2.5	20-40	3	4.5	Bone
			3	3.9	Burned Earth
			1	1.4	Glass
1	2.5	60-80	1	0.9	Glass
1	3	0-40	1	1.0	Glass
			3	3.4	Burned Earth
			1	1.4	Coal
			1	3.7	Glass
1	3	20-40	1	0.9	Bone
1	4	0-20	7	18.0	Glass
			3	35.4	Coal
			2	8.3	Nails
			1	2.5	Bolt
			3	2.7	Unidentified
1	4	20-40	1	0.9	Slag, Coal
			1	0.9	Burned Earth
1	4	45-55	1	8.2	Nail
1	4	0-50	1	1.1	Glass
			2	6.8	Nails
			1	6.0	Wire
			1	1.1	Coal
			1	1.8	Burned Earth
			1	0.9	Brick
			1	1.6	Asphalt Shingling
1	5	0-18	1	2.1	Bakelite
			2	1.4	Glass
1	5	18-40	12	114.0	Concrete
			3	5.9	Glass
			2	1.3	Burned Earth
			3	1.6	Bakelite
			2	1.3	Coal Slag
			3	4.3	Asphalt Shingling
			1	2.1	Wire
			1	0.9	Hewn Wood
			4	16.6	Nails
			6	25.5	Ceramics
			10	192.4	Metal
			2	1.4	Bone
1	5	40-60	2	n.d.	Glass
1	5	60-80	9	81.7	Nails
			1	0.9	Glass
1	5	85-110	3	9.6	Brick Frag.
			2	1.4	Ceramic
			1	9.8	Slag
1	6	0-18	5	4.1	Slag
			1	14.9	Concrete
			1	0.3	Nail
			2	1.5	Coal
			1	1.4	Glass
			1	3.5	Rock
			4	1.0	Unidentified
1	6	18-36	1	0.4	Burned Earth
			1	0.5	Metal
			1	0.6	Ceramics
			1	0.6	Glass
			1	1.5	Coal
1	6	36-60	1	0.2	Plastic
			1	2.3	Coin
			24	63.8	Metal
			5	3.1	Glass
			3	2.8	Ceramics
			2	2.2	Nails
			3	0.4	Charcoal
			1	0.1	Bone
			2	4.0	Sandstone
			3	1.3	Misc. Rock
			4	1.1	Wire
			2	0.9	Slag
			9	4.7	Burned Earth
			1	1.1	Brick
			2	1.8	Cement
1	6	65-85	2	2.7	Glass
			5	14.6	Metal
			8	18.2	Burned Earth
			2	1.2	Wire
			2	2.5	Nails
			1	5.7	Misc. Rock
			1	0.1	Slag
			1	4.4	Concrete

Table 4 (concluded).

Transect	Core	Depth (cm)	No.	Weight (gm)	Description
South Area (continued)					
1	6	85-105	18	12.7	Metal
			4	14.6	Nails
			2	1.5	Fused Glass
			1	5.7	Glass
			164	117.0	Slag
			87	95.5	Concrete
			74	51.7	Sandy Slag
			64	90.6	Burned Earth
			25	2.6	Charcoal
			27	20.6	Misc. Rock
1	3	0-20	2	0.8	Glass
			1	0.2	Asphalt Shingling
2	1	20-42	1	0.5	Brick
2	1	60-80	1	0.8	Glass
2	2	0-20	1	0.4	Metal
			1	0.5	Glass
2	2	20-40	1	7.6	Ceramic
2	3	0-20	1	0.1	Glass
2	4	0-20	1	38.3	Unidentified Rock
2	5	15-35	6	12.4	Glass
			1	4.6	Nail
			6	7.4	Ceramic Tile
			1	0.1	Rubber
			2	0.6	Ceramic
			1	0.3	Snail Shell
			1	120.9	Brick
North Area					
1	5	70-90	1	177.2	Misc. Rock
1	11	5-25	1	3.2	Aluminum Wire
1	15	8-28	1	1.0	Shell Button
1	15	30-50	1	0.7	Bone
3	6	0-20	1	2.8	Square Nail
3	4	25-45	4	2.7	Bone
4	2	5-25	1	1.8	Glass
4	5	0-20	2	6.7	Glass
			1	4.1	Misc. Rock
4	5	80-103	2	0.8	Bone
4	6	5-30	5	5.5	Wood
			11	2.6	Charcoal
			13	49.9	Concrete
4	6	30-50	1	0.7	Glass
			1	0.4	Coal
			1	0.2	Charcoal
4	7	5-30	5	1.6	Wood
			1	0.4	Glass
			10	54.1	Concrete
			2	9.8	Brick
			5	2.5	Bone
			3	2.8	Burned Earth
			2	2.6	Misc. Rock

The three small fragments of bone recovered from Tr 1-15, Tr 3-4, and Tr 4-5 deserve comment. These fragments could derive from historic occupation. However, the possibility of prehistoric origin cannot be ruled out. As shown in Table 4, the bone was recovered at depths of 30-50 cm, 25-45 cm, and 80-103 cm, whereas Euro-American artifacts were largely confined to the upper 25-30 cm of tests. The deeper occurrence of the bone may reflect recovery bias; the fragments may have been dislodged from higher in the profile by the posthole digger. However, if this were the case, it is odd that other historic materials (e.g., glass and nails) were not dislodged in addition to bone. Downward transport of the bone by pedoturbation (rodents, tree roots, shrink-swell, etc.) is also possible, but again, one would expect other materials to be transported downward as well.

One fragment from Tr 4-5, 80-103 cm, is part of a tooth, the enamel of which exhibits sculpturing (minute ridges and grooves). Sculpturing characterizes cervid (e.g., elk, deer), but not bovid (cow, bison) or ovid (sheep, goat), dentition. This increases the likelihood that the tooth fragment is prehistoric or early historic in age.

Even if prehistoric, there is no evidence that the three fragments of bone are of cultural origin. Chipped stone, fire-cracked rock, midden-stained soil, or other definitive indicators of prehistoric occupation were not encountered in the North Area. A small cobble of metamorphic rock, recovered at 70-90 cm from Tr 1-5, might conceivably have been deposited by prehistoric people, since no other cobbles of this size were encountered at this depth elsewhere in the North Area. The cobble was struck with the posthole digger at 85 cm below surface, and was dislodged from the wall of the test hole at this depth with a trowel. The cobble was thus definitely encountered in situ. However, the cobble is not cracked or discolored by fire, nor is it flaked, pecked, or ground. Numerous small pebbles were encountered at similar depths in Tr 1-3, Tr 1-4, and Tr 1-9 (Appendix A). It is likely that the cobble from Tr 1-5 is part of a natural deposit of gravel lying 70-90 cm below surface. The depth of burial suggests that deposition may have occurred in the early or middle Holocene, perhaps during or soon after the draining of Lake Agassiz.

The small amount of bone (three fragments with a combined weight of 4.2 g) is not considered sufficient evidence to identify a prehistoric cultural component in the North Area. It is concluded that the specimens are noncultural. In support of this conclusion, the geological literature notes a relative abundance of mammal bone in post-lake, Holocene deposits of the Red River Valley, much of which is probably natural in origin (Bluemle 1973; Moran 1972).

South Area

The South Area includes land owned by two businesses, a private individual, and the city of East Grand Forks (Table 3). The western third of the area (Figure 8) is a paved parking lot owned by the Spud Bar and Lounge, which is located north of the lot. The eastern third of the area is a vacant lot owned by the city. The city presently uses this lot for stockpiling sand and fill dirt. One such stock pile is outlined in Figure 8 by the 840 ft contour. Between the parking lot and the city's lot are two lots owned by Robb Boushee and Holweger Excavating Company. The Boushee lot is residential and contains a small house and two outbuildings. The Holweger lot contains a large concrete block structure, built in 1941, that houses offices and a machine shop. Machinery, tools, and construction materials are stored in a large yard adjacent the building, on its east side.

Nearly all land surfaces in the South Area have been extensively modified from pre-settlement conditions. The nature and extent of

modification was ascertained from interviews. According to Gary Sanders, an engineering consultant for the city of East Grand Forks, the Spud Bar parking lot is underlain by 5.5-6.1 m (18-20 ft) of historic landfill, primarily construction rubble (concrete, bricks, lumber, etc). He surmised that the fill is thickest near the steep escarpment at the southern edge of the terrace, thinning to the north.

Holweger's lot and the city lot are also extensively filled, according to Sanders. Don Holweger stated that the fill underlying his lot is at least 3.5 m (10 ft) deep, based on observations he once made in a backhoe trench excavated on his property.

Eddie Osowski, superintendent of the East Grand Forks Sewage Department, and the person who oversees waste disposal operations in the city, stated that the city has in the past used its lot as a dump, primarily for construction rubble and fill dirt. According to Osowski, the lot has never been used as dump for commercial or domestic refuse (i.e., garbage). The surface of the city lot is littered with construction rubble, but debris such as broken containers, cans, and so forth, is also observed. Although the lot may never have been explicitly designated as a trash dump for commercial or domestic refuse, considerable quantities of such refuse are apparently included in the deposits, perhaps as a result of illicit dumping, or simply as fortuitous inclusions in construction rubble.

Gary Sanders surmised that Boushee's lot was probably little disturbed. However, Boushee stated that he has, in recent years, dumped considerable amounts of earthen fill on the steep terrace scarp south of his house. Both statements are supported by transect testing (see below).

The above information, obtained prior to the beginning of transect testing, was used in selecting locations for tests. Testing focused on the Boushee property, as it appeared the most likely to contain undisturbed pre-settlement and early historic sediments. Two transects were excavated on Boushee's lot. Transect 1, with seven tests, was excavated along the east edge of the lot. Transect 2, with five tests, extends along the north edge (Figure 8). In addition to the tests on Boushee's lot, an isolated test was excavated at the north end of the city lot (Figure 8) in an attempt to determine the depth of historic fill in this portion of the lot. Interviews and historic documentation were considered sufficient to assess the presence, area, depth, and potential significance of cultural resources elsewhere in the South Area.

Relatively undisturbed soil profiles were recorded in Tr 1-1, Tr 1-3, and the five tests of Transect 2. In Tr 1-2, ca. 25 cm of fill overlay undisturbed soil. Tr 1-4 was excavated in a narrow space between the house and a garage. In this test, 60-70 cm of mottled landfill, derived from the excavation of the house basement, was encountered. The original soil profile was buried beneath this fill.

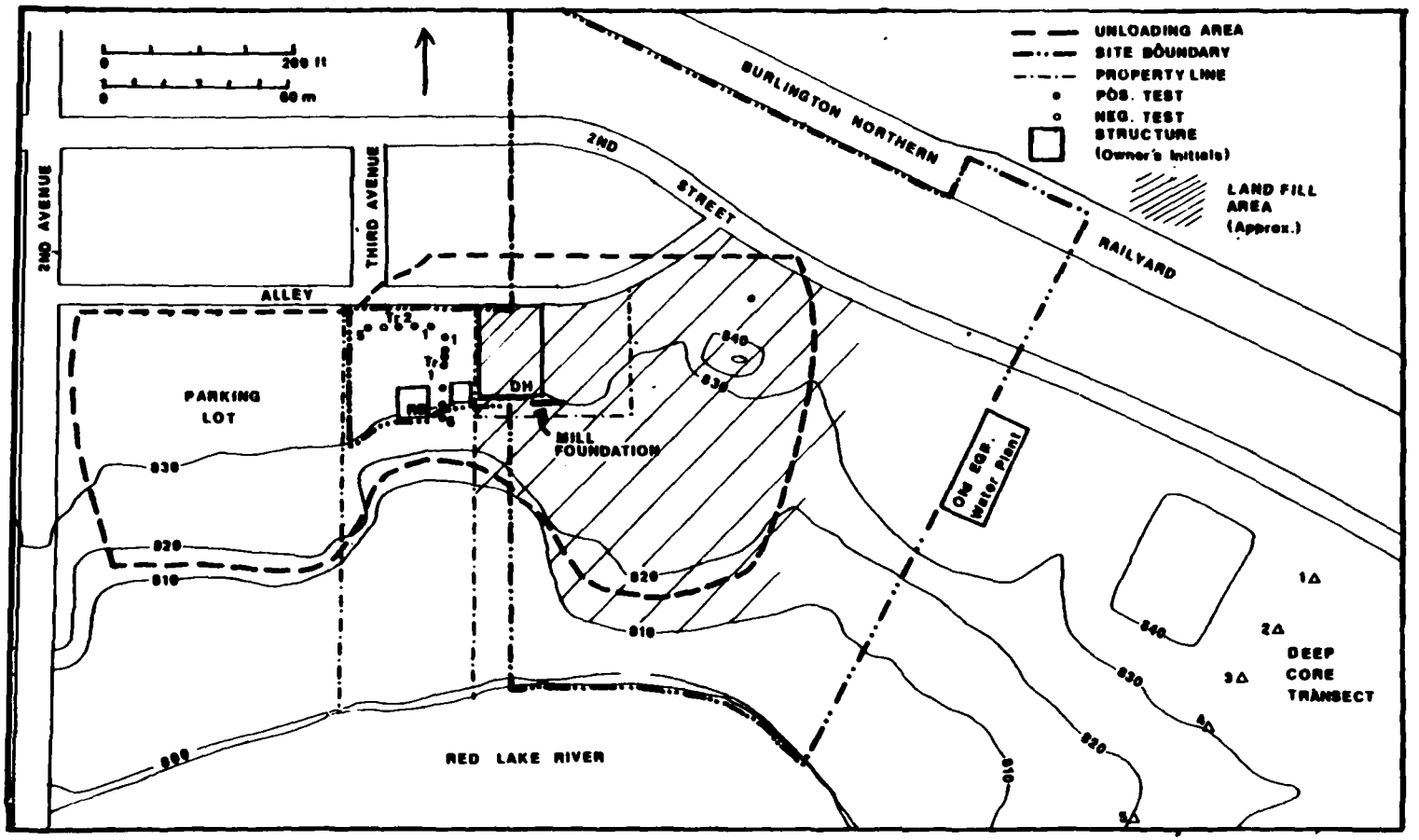

Figure 8. Map of South Area. Source: U.S.C.E., 1:200, 2 ft contour interval project maps).

Tr 1-5 and 1-6 were excavated in landfill on the sloping escarpment of the terrace. The upper 35 cm of Tr 2-5 was historic landfill, associated with the construction of Boushee's driveway. Beneath this fill was undisturbed soil.

Where present, the undisturbed soil profile has two horizons. The uppermost horizon, 40-60 cm thick, is a black (10YR2/1) or very dark gray (10YR3/1), silty clay loam A horizon. Beneath the A horizon is a B horizon that is black (2.5Y2/0) silt loam, grading with depth to very dark grayish brown (2.5Y3/2) or dark grayish brown (2.5Y4/2) silty clay loam or clay loam (Appendix A).

Artifacts were recovered from all tests except Tr 2-4 (Table 4). Round nails, glass, burned earth, scraps of iron and tin, charcoal, coal, coal slag, historic ceramics, and plastic were recovered. North of the terrace slope, historic artifacts were recovered from the upper 20-30 cm of the tests. A few historic artifacts were recovered at greater depths from these tests, but were probably dislodged from higher in the profile during excavation.

The greatest concentration of historic artifacts was encountered in Tr 1-5 and Tr 1-6 on the terrace slope. These tests document over 100 cm of historic landfilling. As documented in Appendix A, the tests revealed distinct cultural stratigraphy. Individual strata, probably representing individual dumping events, were readily identifiable. Layers were distinguished by color and texture of the fill, as well as by artifact content. For instance, in Tr 1-6, a layer dominated by nails, machinery parts, and other fragments of rusted metal overlay one dominated by coal slag, burned earth, and charcoal. No early historic artifacts were identified in the landfill deposits. A 1967 dime was recovered between 36 and 60 cm in Tr 1-6.

One piece of chipped stone debitage and a fragment of a large mammal skull were recovered from Tr 1-2. The chipped stone artifact, recovered at 40-60 cm, is a small (maximum dimension, 16 mm) flake of dark brown, transluscent chalcedony. Since a striking platform, bulb of percussion, and flake ripples are present on the specimen, there is no doubt of its cultural origin. The skull fragment, recovered 25-35 cm below surface, is identified as deer, based on comparisons with modern skeletal material housed at the Department of Anthropology and Archaeology, University of North Dakota.

On discovery of the chipped stone artifact, a second test was excavated adjacent to Tr 1-2. All soil from this test, with a total volume of ca. 0.03 cubic meters, was bagged, taken to the laboratory, and waterscreened on 1.6 mm (1/16 in) mesh. The soil sample yielded a few small fragments of bone and tiny bits of glass and metal, but no chipped stone.

In addition to Transects 1 and 2, a single test was excavated in the landfill area on the city lot (Figure 8). Excavation revealed at

least 70 cm of fill that includes coal, glass, and ceramics (Table 4). At least 50% by volume of the fill is coal slag. This suggests that the area has been used as a dump for residential or commercial refuse, as well as for construction rubble. As stated previously, glass, ceramics, and plastic debris are scattered over the surface of the area, also suggesting that refuse from activities other than construction are present in the landfill deposits.

Archeological Site Description

The former site of the Grand Forks Lumber Company sawmill, located in the South Area, is identified as a potentially significant cultural resource. A Minnesota Archaeological Site Form was completed for the site (Appendix B) and was submitted to the office of the State Archaeologist, where it was designated 21PL17. The purpose of the following discussion is to describe the site and to present the reasons used to identify site boundaries.

The boundaries of the site (Figure 8), enclosing a total area of 14.4 ha (35.6 acres), are somewhat arbitrary. For the most part, they are contiguous with the boundaries of two lots shown as city and county property in a 1930 plat map (Figure 5). These boundaries include, but are slightly larger than, the extent of the Grand Forks Lumber Company property as shown on maps dated 1901 (Figure 4) and 1902 (Anonymous 1901, 1902). Also included within the archeological site is a portion of the Robb Boushee property, where prehistoric remains were located by transect testing.

Three archeological components are identified at the site. The first is a prehistoric component, which is tentatively identified on the basis of a chalcedony flake and a fragmentary deer skull recovered from Tr 1-2. The skull fragment was dislodged from the wall of the test at a depth of 25-35 cm. The flake was recovered by screening earth from the 40-60 cm level of the test. Fragments of glass and metal were recovered from the 0-20 cm, 40-60 cm, and 60-80 cm levels of the test, raising the possibility that the flake and skull fragment are intrusions in a historic fill. However, the soil of Tr 1-2 below 25 cm was homogeneous, lacking the mottled, mixed appearance that generally typifies historic-age fill, and is therefore interpreted as undisturbed. Glass and metal fragments recovered at depth in the undisturbed soil were either transported downward by natural processes of pedoturbation, or were dislodged from higher in the profile during excavation with the posthole digger. The chalcedony flake would be similarly susceptible to disturbance, and could therefore have originated at any depth from 0-60 cm.

From Tr 1-2, it can be concluded that prehistoric material occurs within the upper 60 cm of the surface of 21PL17. The fragmentary deer skull was encountered in undisturbed soil, but the possibility that the

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH x SOUTH

NSECT: North 1 PROPERTY OWNER: Kenneth Holt

E: 3 STREET ADDRESS: 1623 River Road NW

CATION FROM TRANSECT ORIGIN: DATE: 5/22/84

Distance: 15 m EXCAVATORS: Hayden, Artz

Azimuth: 255°

Elevation: 9.92 m

PTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
7 cm	--	sod layer	--
27 cm	10YR2/1	silt loam, granular	none
-47 cm	10YR2/1	silt loam, granular	none
-70 cm	10YR3/1	silt loam, granular	none
-97 cm	10YR5/3	silt loam, about 30 small pebbles	none
-113 cm	2.5Y5/4	silty clay loam, makes weak ribbon	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH x SOUTH

TRANSECT: North 1

CORE: 2

LOCATION FROM TRANSECT ORIGIN:

Distance: 10 m

Azimuth: 255°

Elevation: 9.92 m

PROPERTY OWNER: Kenneth Holt

STREET ADDRESS: 1623 River Road NW

DATE: 5-22-84

EXCAVATORS: Hayden/Artz

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-10 cm	10YR2/1	silt loam, granular	none
10-30 cm	10YR2/1	silt loam, granular	none
30-50 cm	10YR3/1	silt loam, few patches of subsoil, many roots	none
50-70 cm	10YR3/1, changing to 10YR5/3 at ca. 65 cm	silt loam	none
70-90 cm	Change at 80 cm to 10YR6/6	silt loam changing to silty clay loam	none
90-100 cm	10YR6/6	silt, massive, loess-like	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH x SOUTH ____

TRANSECT: North 1 PROPERTY OWNER: Kenneth Holt

CORE: 1 STREET ADDRESS: 1623 River Road NW

LOCATION FROM TRANSECT ORIGIN: DATE: 5/23/84

Distance: 5 m EXCAVATORS: Hayden, Artz

Azimuth: 255°

Elevation: 10.06 m

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	---	sod layer	---
5-25 cm	10YR2/1	silt loam, granular	none
25-48 cm	10YR2/1 grading to 10YR3/1	silt loam, granular	none
48-65 cm	10YR2/1 w/ patches of sandier, yellowish brown	silt loam, granular, sandier than 25-48 cm	none
65-90 cm	10YR2/1; abrupt change to 10YR5/4 at ca. 75 cm.	silt loam, changing to silty clay loam	none
90-100 cm	10YR6/4	silty, loess-like loam; B horizon	none

APPENDIX A

EXCAVATION FORMS FROM

TRANSECT TESTING

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cultural resources in the North Area. No further cultural resource investigations are required in this area prior to impact.

Bank unloading in the South Area would severely impact 21PL17, the Grand Forks Lumber Company sawmill site. Although much of the site lies outside the boundaries of the unloading area (Figure 8), the most significant portions are within the unloading area and would be directly impacted by unloading. These portions include a section of concrete foundation, which is the only structural remnant of the early twentieth century sawmill, as well as the thickest deposits of the twentieth century landfill. In addition, a light density deposit of prehistoric remains would be impacted. Based on the results of the present reconnaissance, the landfill deposits have a relatively great potential for significance, especially if deposits dating between the close of the sawmill (ca. 1911) and the 1930s are present. In this case, the deposits would have the potential to yield archeological evidence providing insights into an era of fundamental social and economic change in East Grand Forks.

It is recommended that, prior to impact, intensive testing be conducted at 21PL17 in an attempt to locate intact, early twentieth century deposits. The landfill deposits are undoubtedly complexly stratified. Investigation of the deposits would require the use of heavy equipment such as a backhoe to open trenches across the landfill. The purpose of trenching would be to provide contiguous cross sections of landfill stratigraphy and to permit sampling of the strata to determine the age and sequence of deposits. These investigations would provide sufficient information to conclusively evaluate the National Register eligibility of the landfill deposits, and would form the basis for further management and/or mitigation of the site.

Testing prior to impact is recommended over a second alternative, which would be to monitor the unloading of earth from the area at the time of impact. The landfill deposits can be expected to have considerable complexity. Rather than a simple "layer cake" type of stratigraphy, the deposits are expected to be complexly interlayered, with evidence for considerable reworking of deposits as the landfill accumulated over time. Identification of intact early strata would require careful attention to details of stratigraphy. Detailed stratigraphic control could not be maintained in the course of monitoring. Testing is recommended to ensure that adequate time is available for the careful, systematic investigation of the deposits.

The sawmill component and prehistoric component of the site have low potential significance. No further investigation of these components of the site is recommended.

These criteria are set forth under Title 36, part 60, section 4, of the Code of Federal Regulations (36CFR60.4).

The standing structures in the two Project Areas are judged to have low potential for eligibility. With the exception of the residence of Kenneth Holt, which was built in 1933, all structures are less than 50 years old. An in-depth study of the architectural history of the standing structures was not undertaken in this project. However, none of the structures appears to be particularly distinctive or unique in terms of architecture. The literature and records review revealed no evidence that the structures have been associated with significant historic events or persons.

The former sawmill site, 21PL17, meets one criterion for National Register eligibility in that it was "associated with events that have made a significant contribution to the broad patterns of our history" (36CFR60.4). However, the site has been severely damaged by landfilling and construction, and thus lacks the "integrity of . . . setting" required of National Register properties. The sawmill component of the site is thus considered ineligible for nomination to the Register.

The landfill component of the site has a considerable thickness of deposits that are less than 50 years old. These deposits would not be eligible for nomination to the Register. However, it is possible that deposits older than 50 years are present. Such deposits could potentially be quite significant. Any deposits dating between the closing of the mill (ca. 1911) and the 1930s would include remains deposited before and during Prohibition. They would also possibly record the transition of East Grand Forks from a community whose major products were lumber and beer to a community with an economic basis in agriculture. Archeological remains, whether industrial, commercial, or residential, would have the potential to provide significant insights into either transition, and would thus enrich the cultural heritage of the community and its people.

The tentatively identified prehistoric component of the site has relatively low potential for significance. Intact prehistoric deposits are most likely limited to a small area. Artifact densities within this area are undoubtedly low.

Project Impacts and Recommendations

The proposed bank unloading would remove 2.4-4.5 m (8-15 ft) of earth from the North and South Project Areas. Based on the results of deep coring, only the upper 1.2-1.5 m of this thickness has the potential to contain cultural resources. Below this depth are Sherack Formation sediments, which were deposited on the bed of glacial Lake Agassiz and thus have little or no archeological potential. The investigations reported in this volume identified no significant

South Area

A literature and documents review indicates that the South Area includes the sites of the East Grand Forks Brewery and the Grand Forks Lumber Company sawmill. These two concerns played important roles in the economic development of East Grand Forks in the nineteenth and early twentieth centuries. In addition, each is associated with a dominant theme in the early history of the city: lumbering, and the turmoil surrounding the temperance movement and Prohibition.

The brewery and sawmill have both been razed and their former sites extensively modified by subsequent landfill and construction. The brewery site has been completely destroyed, but a small section of sawmill foundation has survived.

Historic landfilling has extensively modified the surface of the South Area. Only one small area, on the Robb Boushee property, remains relatively undisturbed. At least 3.0 m and perhaps 5.5-6.0 m of landfill have been built up along the southern edge of a terrace that slopes down to the Red Lake River floodplain. This fill is largely composed of construction rubble (concrete, brick, lumber, etc.) and fill dirt, but transect tests and surface observations confirm that commercial and domestic refuse is also included in the deposits.

In addition to the historic remains discussed above, one chalcedony flake and a fragmentary deer skull were recovered from a transect test on the Boushee property. These items represent a light density prehistoric component. The low density of prehistoric material precludes definitive statements concerning the degree of historic disturbance of the prehistoric remains. However, given its low density and its location in a heavily developed area, the prehistoric deposit is judged to have little potential significance as a cultural resource. Prehistoric remains are probably restricted to the relatively undisturbed soils of the Boushee property.

The prehistoric remains, the former sawmill site, and the location of a twentieth century city landfill are identified as an archeological site, 21PL17. Standing structures in the South Area include the Boushee residence and a concrete block building that houses Holweger Excavating, Incorporated. Both structures are less than fifty years old and have little potential significance as cultural resources vis a vis National Register eligibility.

Significance Evaluations

The significance of cultural resources in the two Project Areas is here evaluated in terms of the criteria used to establish the eligibility of properties for the National Register of Historic Places.

CHAPTER 5

SUMMARY, EVALUATIONS, AND RECOMMENDATIONS

Summary

The objectives of the archeological reconnaissance reported in this volume were to identify, investigate, and evaluate the cultural resources of two proposed bank unloading areas in East Grand Forks, Minnesota. A review of records, documents, and literature was conducted to identify previously recorded resources and to assess the potential for discovering previously unrecorded resources in the two Project Areas. An archeological field reconnaissance, employing a combination of deep coring, subsurface transect testing, and surface survey, was undertaken to search for and investigate unrecorded archeological sites. The results of the above investigations are presented in the preceding chapters, and are summarized in the following sections of this chapter. The concluding sections of the chapter evaluate the cultural resources in terms of potential National Register eligibility, discuss the impact of the proposed unloading activities on cultural resources of the Project Areas, and offer recommendations for resource management.

North Area

Deep coring and transect testing reveal that the top of the Sherack Formation is only 1.2-1.5 m deep in the North Area. Prehistoric archeological deposits are not expected to occur in Sherack Formation sediments, which were deposited in glacial Lake Agassiz during the Emerson phase (ca. 9900-9500 B.P.). Transect testing revealed no evidence of prehistoric occupation in the North Area. Transect tests encountered a shallow, light density scatter of historic, Euro-American debris. No archeological sites are identified in the North Area.

A literature and documents review reveals that the North Area was once part of the Leon Suprenant farm. Suprenant was one of the first homesteaders in the East Grand Forks vicinity, arriving in 1871. The only potential archeological evidence of late nineteenth or early twentieth century use of the area is a shell button and a square, machine cut nail recovered in transect testing. The oldest standing structure in the North Area is the Kenneth Holt residence, built in 1933. Other standing structures include three ranch-style houses that post-date 1950. These four structures are not considered significant as cultural resources *vis a vis* National Register significance criteria.

flake is intrusive in Euro-American fill cannot be ruled out. Prehistoric materials are probably limited in their areal extent to the relatively undisturbed portion of the Boushee property between the house and the alley. Historic landfilling and construction have most likely destroyed or disturbed any prehistoric cultural deposits to the east or west of the Boushee property. The density of prehistoric remains at the site is difficult if not impossible to reliably estimate from the results of shovel or posthole digger tests (cf. Nicholson 1983; Wobst 1983). However, since only one of eight tests in the undisturbed portion of the property yielded prehistoric remains, the density and integrity of cultural material is probably not great. Therefore, the prehistoric remains are judged to have little significance as cultural resources.

The second component of 21PL17 consists of remains associated with the operation of the Grand Forks Lumber Company sawmill, from 1899 to sometime after 1911. The only known remnant of this component is a short section of massive concrete foundation. This foundation, pointed out to the author by Don Holweger, is located immediately south of Holweger's equipment yard (Figure 8). According to Holweger, the foundation remnant has resisted all attempted demolition efforts. The foundation is partially buried by earthen landfill. The razing of the sawmill and subsequent landfilling probably destroyed or disturbed most deposits associated with the the mill.

The third archeological component of the site is a historic landfill. The lateral extent of landfilling on the site was determined by interviews, by surface inspection to trace the limits of rubble and debris on the surface, and from an isolated posthole test. The thickness of the deposit exceeds 3.0 m (10 ft) in the southern portions of the fill area, and exceeds 70 cm (2.3 ft) in the northern portions. Most of this fill is believed to have accumulated following the closing of the sawmill, when the city used the area as a dumping ground. The date when the city and county acquired the property is not known, but occurred before 1930 as indicated by a city map from that year (Figure 5). It is reasonable to suggest that the property was transferred to government ownership soon after the closing of the sawmill. Further documentary research might verify this possibility.

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH x SOUTH

TRANSECT: North 1

CORE: 4

LOCATION FROM TRANSECT ORIGIN:

Distance: 20 m

Azimuth: 255°

Elevation: 9.77

PROPERTY OWNER: Kenneth Holt

STREET ADDRESS: 1623 River Road NW

DATE: 5/22/84

EXCAVATORS: Artz, Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-20 cm	10YR2/1	silt loam, granular	none
20-40 cm	10YR2/1	silt loam, granular	none
40-61 cm	10YR3/1	silt loam, granular	1 piece coal
61-80 cm	10YR3/1	silt loam, granular	none
80-90 cm	10YR5/3	silt loam, a few pebbles, perhaps gypsum?	none
90-105 cm	10YR6/6	silty, loess-like	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH x SOUTH ____

TRANSECT: North 1 | PROPERTY OWNER: Kenneth Holt

CORE: 5 | STREET ADDRESS: 1623 River Road NW

LOCATION FROM TRANSECT ORIGIN: | DATE: 5/22/84

Distance: 25 | EXCAVATORS: Artz, Hayden

Azimuth: 255°

Elevation: 9.83

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	Sod layer	--
5-25	10YR2/1	silt loam, granular	none
25-45 cm	10YR2/1 grading to 10YR3/1	silt loam, granular	none
45-70 cm	10YR3/1	silty clay loam	none
70-90 cm	2.5Y4/2	silty clay loam	cobble at ca. 85 cm, in situ in sidewall
90-100 cm	10YR6/4	silt loam, loess-like	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH x SOUTH ____

TRANSECT: North 1 | PROPERTY OWNER: Kenneth Holt

CORE: 6 | STREET ADDRESS: 1623 River Road NW

LOCATION FROM TRANSECT ORIGIN: | DATE: 5/22/84

Distance: 30 m | EXCAVATORS: Hayden, Artz

Azimuth: 255°

Elevation: 9.84 m

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	--
5-20 cm	10YR2/1	silty clay loam	none
20-40 cm	10YR3/1	silty clay loam	none
40-60 cm	10YR4/2	silty clay loam	none
60-80 cm	10YR5/3	silt loam	none
80-100 cm	10YR6/4	silt loam	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH x SOUTH

TRANSECT: North 1

CORE: 7

LOCATION FROM TRANSECT ORIGIN:

Distance: 30 m

Azimuth: 264°

Elevation: 9.86 m

PROPERTY OWNER: Kenneth Holt

STREET ADDRESS: 1623 River Road NW

DATE: 5/22/84

EXCAVATORS: Artz/Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-7 cm	--	sod layer	--
7-29 cm	10YR2/1	silty clay loam with abundant pebbles, probably fill from storm sewer ?	none
29-47 cm	10YR2/1	silty clay loam, no gravel	none
47-67 cm	10YR4/2	silty clay loam, many roots	none
67-87 cm	10YR6/6	silty clay loam	none
87-107 cm	10YR6/6	silt loam, loess-like, massive, as encountered in previous holes	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH x SOUTH

TRANSECT: North 1

CORE: 8

LOCATION FROM TRANSECT ORIGIN:

Distance: 35 m

Azimuth: 264°

Elevation: 9.93 m

PROPERTY OWNER: Kenneth Holt

STREET ADDRESS: 1623 River Road NW

DATE: 5/22/84

EXCAVATORS: Hayden/Artz

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL

Near a small tree; not excavated

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH x SOUTH

TRANSECT: North 1

CORE: 9

LOCATION FROM TRANSECT ORIGIN:

Distance: 40 m

Azimuth: 264°

Elevation: 9.93 m

PROPERTY OWNER: Kenneth Holt

STREET ADDRESS: 1623 River Road NW

DATE: 5/23/84

EXCAVATORS: Hayden, Artz

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	--
5-27 cm	10YR2/1	silty clay loam w/ many pebbles (fill?)	none
27-45 cm	10YR2/1	si. clay loam with few pebbles, many roots	none
45-67 cm	10YR4/2 changing to 10YR5/3		none
67-86 cm	10YR5/3 changing to 10YR6/6	changes to loess-like yellow silty clay loam	none
86-106 cm	10YR6/6	loess-like, some pebbles and perhaps gypsum crystals	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH xx SOUTH ____

TRANSECT: North 1
CORE: 10
LOCATION FROM TRANSECT ORIGIN:
Distance: 45 m
Azimuth: 264°
Elevation: 9.92 m

PROPERTY OWNER: Kenneth Holt
STREET ADDRESS: 1623 River Road NW
DATE: 5/22/84
EXCAVATORS: Hayden, Artz

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-6 cm	--	sod layer	--
6-27 cm	10YR2/1	silty clay loam	none
27-42 cm	10YR2/1	silty clay loam	none
42-67 cm	10YR4/2 grading to 10YR5/3	silty clay loam	none
67-80 cm	10YR5/3	silty clay loam	none
80-100 cm	10YR6/6	silt loam has a weak, blocky structure in undisturbed chunks; loess-like material	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH X SOUTH

TRANSECT: North 1

CORE: 11

LOCATION FROM TRANSECT ORIGIN:

Distance: 50 m

Azimuth: 264°

Elevation: 9.91 m

PROPERTY OWNER: Kenneth Holt

STREET ADDRESS: 1623 River Road NW

DATE: 5/22/84

EXCAVATORS: Hayden, Artz

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	--
5-25 cm	10YR2/1	silty clay loam w/ abundant pebbles	none
25-50 cm	10YR2/1	silty clay loam w/ few pebbles	none
50-72 cm	10YR2/1 grading to 10YR4/2	silty clay loam	none
At 75 cm encountered tree root, so re-excavated core.			
0-5 cm	as above	as above	as above
5-25 cm	as above	as above	aluminum wire
25-75 cm	as above	as above	as above
75-95 cm	10YR6/4 encountered, ca. 85-95 cm		none
95-120 cm	10YR6/4	silt loam	none
120-130 cm	2.5Y7/4 mottled w/ orangeish and yellow brown	Very faint, weak laminations seen in some larger chunks	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH x SOUTH ____

TRANSECT: North 1
CORE: 12
LOCATION FROM TRANSECT ORIGIN:
Distance: 54 m
Azimuth: 264°
Elevation: 9.86 m

PROPERTY OWNER: Kenneth Holt
STREET ADDRESS: 1623 River Road NW
DATE: 5/22/84
EXCAVATORS: Hayden, Artz

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	--
5-25 cm	10YR2/1	silty clay loam, granular	none
25-45 cm	10YR2/1	silty clay loam, granular	none
45-65 cm		silty clay, blocky	none
65-85 cm	10YR	silty clay loam, blocky	none
85-110 cm	2.5Y5/4	silty clay loam	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH x SOUTH ____

TRANSECT: North 1

CORE: 13

LOCATION FROM TRANSECT ORIGIN:

Distance: 60 m

Azimuth: 264°

Elevation: 9.80 m

PROPERTY OWNER: Kenneth Holt

STREET ADDRESS: 1623 River Road NW

DATE: 5/22/84

EXCAVATORS: Hayden, Artz

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	--
5-30 cm	10YR2/1	silty clay loam, granular	none
30-47 cm	10YR2/1	silty clay loam, granular	none
47-65 cm	2.5Y5/2	silty clay loam	none
65-86 cm	2.5Y5/2 changing abruptly to 10YR5/6	silty clay loam	none
86-106 cm	10YR5/6	silty clay loam, blocky structure, finely mottled with orange	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH x SOUTH

TRANSECT: North 1

CORE: 14

LOCATION FROM TRANSECT ORIGIN:

Distance: 65 m

Azimuth: 264°

Elevation: 9.65 m

PROPERTY OWNER: Kenneth Holt

STREET ADDRESS: 1623 River Road NW

DATE: 5/22/84

EXCAVATORS: Hayden, Artz

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	--
5-27 cm	10YR2/1	silty clay loam, granular	none
27-45 cm	10YR2/1	silty clay loam, granular	none
45-65 cm	10YR2/1 grading to 2.5Y5/2	silty clay loam, granular grading to weak blodky	none
65-95 cm	2.5Y5/2 grading to 2.5Y6/4	silty clay loam, moister, darker, than higher areas to east on the transect	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH x SOUTH

RANSECT: North 1 PROPERTY OWNER: Kenneth Holt

ORE: 15 STREET ADDRESS: 1623 River Road NW

OCATION FROM TRANSECT ORIGIN: DATE: 5/22/84

Distance: 70 m EXCAVATORS: Artz, Hayden

Azimuth: 264°

Elevation: 9.60 m

EPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
-8 cm	--	sod layer	---
-28 cm	10YR2/1	silty clay loam, granular	1 shell button
8-52 cm	10YR2/1	silty clay loam, granular	1 bone fragment
2-72 cm	10YR2/1	silty clay loam, granular	none
	NOTE: The soil is clayier, deeper than any other encountered on this transect. The coring point is in a low lying, linear depression.		
72-92 cm	10YR2/1 grading to 2.5Y5/2	silty clay	none
92-112 cm	2.5Y5/4 mottled w/ 7.5YR5/8	silty clay loam; like the "loess-like" material, but clayier, wetter.	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH xx SOUTH_____

TRANSECT: North 1 PROPERTY OWNER: Kenneth Holt

CORE: 16 STREET ADDRESS: 1623 River Road NW

LOCATION FROM TRANSECT ORIGIN: DATE: 5/22/84

Distance: 75 m EXCAVATORS: Hayden, Artz

Azimuth: 264°

Elevation: 9.68 m

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-8 cm	--	sod layer	--
8-28 cm	10YR2/1	silty clay, granular	none

At 38 cm, a large root prevented further digging; shifted 20 cm west and re-excavated.

0-40 cm as above

40-70 cm The soil is mucky clay, has a mottled, disturbed appearance. Also many tree roots. This may be filling of a low area near building

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH X SOUTH

SECT: North 2

: 1

TION FROM TRANSECT ORIGIN:

Distance: 5 m

Azimuth: 209°

Elevation: 10.14

PROPERTY OWNER: Ardell Jeffries

STREET ADDRESS: 1715 River Road NW

DATE: 5/24/84

EXCAVATORS: Artz, Hayden

H (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
5 cm	--	sod layer	--
25 cm	10YR3/1	silty clay loam, granular, common pebbles	none
-45 cm	10YR3/1	silty clay loam, granular, pebbles common	none
-65 cm	10YR3/1	silty clay loam with distinct, coarse patches of 2.5Y5/6	none
-90 cm	10YR3/1	less distinct, finer mottles of 2.5Y5/6	none
-100 cm	10YR3/1	silty clay loam, unmottled, blocky, like the first subsoil horizon of Transect 1 (5/23/84)	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH X SOUTH

SECT: North 4

: 1

TION FROM TRANSECT ORIGIN:

Distance: 4 m

Azimuth: 277°

Elevation: 9.40 m

PROPERTY OWNER: Gust Hangsleben

STREET ADDRESS: 1 Forrest Court NW

DATE: 5-29-84

EXCAVATORS: Artz, Hayden

H (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
cm	--	sod layer, entirely of gravel pebbles	--
00 cm		Construction fill. Alternating layers of yellowish brown gray and dark brown soil, probably related to burial of storm sewer. Not excavated, but probed with Oakfield soil probe to determine stratigraphy	

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH X SOUTH

NSECT: North 3

E: 8

ATION FROM TRANSECT ORIGIN:
Distance: 40 m
Azimuth: 253°
Elevation: 9.36 m

PROPERTY OWNER: Kenneth Holt

STREET ADDRESS: 1623 River Road NW

DATE: 5/29/84

EXCAVATORS: Artz, Hayden

TH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
-5 cm	--	sod layer	--
-27 cm	10YR3/1	silt loam, granular	none
7-45 cm	10YR3/1	silt loam, granular	none
5-65 cm	10YR3/1 grading to 2.5Y4/2 at base of level		none
5-88 cm	2.5Y4/2 grading to 2.5Y5/4		none
8-108 cm	2.5Y5/4 grading to 2.5Y6/6		

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH x SOUTH

ANSECT: North 3

RE: 7

CATION FROM TRANSECT ORIGIN:

Distance: 35 m

Azimuth: 253°

Elevation: 9.41 m

PROPERTY OWNER: Kenneth Holt

STREET ADDRESS: 1623 River Road NW

DATE: 5/29/84

EXCAVATORS: Artz, Hayden

PTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	--
5-25 cm	10YR3/1	silt loam	none
25-58 cm	10YR3/1	silt loam	none
58-65 cm	10YR3/1 grading to 2.5Y4/2		none
65-85 cm	2.5Y4/2 grading to 2.5Y5/2	silt loam mottled with 2.5Y5/4. similar to loess-like material, but clayier, darker	none
85-111 cm	2.5Y5/2 grading to 2.5Y6/6	silt loam, loess like material	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH xx SOUTH ____

TRANSECT: North 3
CORE: 6
LOCATION FROM TRANSECT ORIGIN:
Distance: 30 m
Azimuth: 253°
Elevation: 9.50 m

PROPERTY OWNER: Kenneth Holt
STREET ADDRESS: 1623 River Road NW
DATE: 5/29/84
EXCAVATORS: Artz, Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	--
5-25 cm	10YR3/1	silt loam, granular	1 square nail
25-45 cm	10YR3/1	silt loam, granular	none
45-90 cm	10YR3/1 grading to 2.5Y4/2		none
90-105 cm	2.5Y6/2	loess-like silt loam	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH xx SOUTH_____

TRANSECT: North 3

CORE: 5

LOCATION FROM TRANSECT ORIGIN:

Distance: 25 m

Azimuth: 253°

Elevation: 9.55 m

PROPERTY OWNER: Kenneth Holt

STREET ADDRESS: 1623 River Road NW

DATE: 5/29/84

EXCAVATORS: Artz, Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	--
5-25 cm	10YR3/1	silty clay loam, granular	none
25-45 cm	10YR3/1	silty clay loam, granular. At base of level, change to grayer subsoil seen	none
45-65 cm	10YR3/2 grading to 2.5Y3/2 and 2.5Y4/2	silt loam; loose, friable	none
65-85 cm	2.5Y4/2	silt loam; krotovinas filled with yellowish brown subsoil	none
85-105 cm	2.5Y5/4	silt loam, loess-like material encountered near base of level	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH x SOUTH ____

TRANSECT: North 3
CORE: 4
LOCATION FROM TRANSECT ORIGIN:
Distance: 20 m
Azimuth: 253°
Elevation: 9.64 m

PROPERTY OWNER: Kenneth Holt
STREET ADDRESS: 1623 River Road NW
DATE: 5/29/84
EXCAVATORS: Artz, Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	--
5-25 cm	10YR3/1	silty clay loam, granular	none
25-45 cm	10YR3/1	silty clay loam, granular	2 fragments of bone
45-49 cm	10YR3/1	silty clay loam,	1 fragment of bone, perhaps dislodged from 25-45 cm
NOTE: Encountered root at 49 cm, shifted hole ½ diameter to go around it			
0-40 cm	10YR3/1	as above	1 bone fragment
40-60 cm	10YR3/1	silty clay loam	none
60-80 cm	10YR3/1 grading to 2.5Y4/2	silt loam	none
80-100 cm	2.5Y6/2	silt loam, loess-like material	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH X SOUTH

TRANSECT: North 3

CORE: 3

LOCATION FROM TRANSECT ORIGIN:

Distance: 16.5 m

Azimuth: 253°

Elevation: 9.70 m

PROPERTY OWNER: Kenneth Holt

STREET ADDRESS: 1623 River Road NW

DATE: 5/29/84

EXCAVATORS: Artz/Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	--
5-25 cm	10YR3/1	silty clay loam, granular	none
Note: At 35 cm, encountered root. Moved core 1.5 m west			
0-5 cm	--	sod layer	--
5-25 cm	10YR3/1	silty clay loam, granular	none
25-47 cm	10YR3/1	silty clay loam, granular	none
47-65 cm	10YR3/1	silty clay loam, blocky	none
65-85 cm	2.5Y4/2 grading to 2.5Y6/2	silt loam, blocky	none
85-102 cm	2.5Y6/2 grading to 2.5Y6/4	silt loam, loess-like material	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH X SOUTH

TRANSECT: North 3

CORE: 2

LOCATION FROM TRANSECT ORIGIN:

Distance: 10 m

Azimuth: 253°

Elevation: 9.79 m

PROPERTY OWNER: Kenneth Holt

STREET ADDRESS: 1623 River Road NW

DATE: 5-29-84

EXCAVATORS: Artz/Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	--
5-25 cm	10YR2/1	silty clay loam, granular	none
25-45 cm	10YR2/1	silty clay loam, granular	none
45-65 cm	2.5Y4/2	silty clay loam, mottled	none
65-85 cm	2.5Y4/2 grading to 2.5Y6/2	silt loam	none
85-105 cm	2.5Y6/4	silt loam, loose, loess-like soil	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH X SOUTH

TRANSECT: North 3

CORE: 1

LOCATION FROM TRANSECT ORIGIN:

Distance: 5 m

Azimuth: 253°

Elevation: 9.85 m

PROPERTY OWNER: Kenneth Holt

STREET ADDRESS: 1623 River Road NW

DATE: 5/29/84

EXCAVATORS: Artz/Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-8 cm	--	sod layer	--
8-28 cm	10YR2/2	silt loam, granular	none
28-48 cm	10YR2/2	silt loam, granular	none
48-68 cm	2.5Y4/2	silty clay loam, mottled subsoil	none
68-88 cm	2.5Y5/2	silt loam, mottled	none
88-108 cm	2.5Y5/2 grading to 2.5Y6/4	silt loam, mottled	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH X SOUTH

TRANSECT: North 2

CORE: 6

LOCATION FROM TRANSECT ORIGIN:

Distance: 30 m

Azimuth: 209°

Elevation: 10.12 m

PROPERTY OWNER: Ardell Jeffries

STREET ADDRESS: 1715 River Road NW

DATE: 5/24/83

EXCAVATORS: Artz, Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	--
5-15 cm		topsoil, fill	none
15-75 cm	Mottled yellow, gray and black fill. Many chunks, when broken open, show olive clay skins, similar to those observed in Sherack Formation sediments in the NDGS cores.		
75-100 cm	10YR3/1	silty clay loam, blocky. probably original, undisturbed topsoil	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH X SOUTH

TRANSECT: North 2

CORE: 5

LOCATION FROM TRANSECT ORIGIN:

Distance: 25 m

Azimuth: 209°

Elevation: 10.23 m

PROPERTY OWNER: Ardell Jeffries

STREET ADDRESS: 1715 River Road NW

DATE: 5/24/84

EXCAVATORS: Artz, Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	--
5-18 cm		A dark grayish brown topsoil	none
18-75 cm		A fill in which the dominant color was 10YR5/4 to 2.5Y5/4	none
75-100 cm	10YR3/1	blocky silty clay loam, but with considerable inclusions, often as stringers and laminations, of yellowish brown and gray. This may be original topsoil, but disturbed during construction of houses	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH X SOUTH

TRANSECT: North 2

CORE: 4

LOCATION FROM TRANSECT ORIGIN:

Distance: 20 m

Azimuth: 209°

Elevation: 10.23 m

PROPERTY OWNER: Ardell Jeffries

STREET ADDRESS: 1715 River Road NW

DATE: 5/24/84

EXCAVATORS: Artz, Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	--
5-52 cm	A mottled fill of topsoil and subsoil material		none
52-80 cm	10YR2/1	silty clay loam, blocky breaking to granular	none
80-100 cm	10YR2/1 grading to 10YR3/1	silty clay loam, weak blocky	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH xx SOUTH ____

TRANSECT: North 2

CORE: 3

LOCATION FROM TRANSECT ORIGIN:

Distance: 15 m

Azimuth: 209°

Elevation: 10.19 m

PROPERTY OWNER: Ardell Jeffries

STREET ADDRESS: 1715 River Road NW

DATE: 5/24/84

EXCAVATORS: Artz, Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	--
5-25 cm	Fill, black, mottled with brown and olive brown. Probably from filling in cavity left by nearby stump of tree. Bottom of fill is visible in wall at ca. 20-21 cm below surface.		
25-45 cm	10YR3/1	silty clay loam, granular	none
45-65 cm	10YR3/1	silty clay loam, weak blocky	

NOTE: At 70 cm, encountered large root. Shifted 15 cm west and redug core.

0-65 cm	As above	
65-75 cm	10YR4/1 mottled with 2.5Y5/2	

NOTE: At 75 cm, encountered large root, abandoned test.

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH X SOUTH

TRANSECT: North 2

CORE: 2

LOCATION FROM TRANSECT ORIGIN:

Distance: 10 m

Azimuth: 209°

Elevation: 10.20 m

PROPERTY OWNER: Ardell Jeffries

STREET ADDRESS: 1715 River Road NW

DATE: 5/24/84

EXCAVATORS: Artz, Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	none
5-25 cm	10YR3/1	silty clay loam, granular with pebbles	none
25-45 cm	10YR3/1	silty clay loam, granular	none
45-65 cm	10YR3/1	silty clay loam, granular to subangular blocky with occasional patches of 2.5Y4/2	none
65-95 cm	2.5Y4/2, grading to 2.5Y5/4	silty clay loam	none
95-110 cm	2.5Y5/4 with mottles of 2.5Y4/2	silty clay loam	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH X SOUTH

TRANSECT: North 4

CORE: 2

LOCATION FROM TRANSECT ORIGIN:

Distance: 9 m

Azimuth: 277°

Elevation: 9.47 m

PROPERTY OWNER: Gust Hangsleben

STREET ADDRESS: 1 Forrest Court NW

DATE: 5/29/84

EXCAVATORS: Artz/ Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer, much gravel	--
5-25 cm	10YR3/1	silt loam, granular, much pea-sized gravel	1 piece of glass
25-45 cm	10YR3/1	silt loam, granular	none
45-65 cm	10YR3/1 grading to 2.5Y4/2	silt loam, granular	none
65-90 cm	2.5Y4/2 changing at ca. 70 cm to 2.5Y5/4	silt, loess-like material	none
90-105 cm	2.5Y5/4 grading to 2.5Y6/4 or 2.5Y6/6	silt, loess-like material	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH X SOUTH

TRANSECT: North 4

CORE: 3

LOCATION FROM TRANSECT ORIGIN:

Distance: 14 m

Azimuth: 277°

Elevation: 9.43 m

PROPERTY OWNER: Gust Hangsleben

STREET ADDRESS: 1 Forrest Court NW

DATE: 5/29/84

EXCAVATORS: Artz/Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	--
5-25 cm	10YR3/1	silt loam, granular with some gravel	none
25-45 cm	10YR3/1	silty clay loam; granular, no gravel; moist, sticky	none
45-65 cm	10YR3/1 grading to 2.5Y4/2	silt loam, not as clayey as above level	none
65-90 cm	At 70 cm, change (rather abrupt) to 2.5Y5/4 silt loam, loess-like material		none
90-110 cm	2.5Y5/4 grading to 2.5Y6/6	silt loam; weak, blocky structure, finely mottled	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH X SOUTH

TRANSECT: North 4

CORE: 4

LOCATION FROM TRANSECT ORIGIN:

Distance: 19 m

Azimuth: 277°

Elevation: 9.46 m

PROPERTY OWNER: Gust Hangsleben

STREET ADDRESS: 1 Forrest Court NW

DATE: 5/29/84

EXCAVATORS: Artz/Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-7 cm	--	sod layer	--
7-27 cm	10YR3/1	silty clay loam, granular	none
27-51 cm	10YR3/1	silty clay loam, granular	none
51-77 cm	10YR3/1 grading to 2.5Y4/2		none
77-87 cm	2.5Y4/2, encountering 2.5Y5/4 at top of level		none
87-110	2.5Y5/4 grading to 10YR6/6	silt loam, loess-like material	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH X SOUTH

TRANSECT: North 4

CORE: 5

LOCATION FROM TRANSECT ORIGIN:

Distance: 24 m

Azimuth: 277°

Elevation: 9.50 m

PROPERTY OWNER: Gust Hangsleben

STREET ADDRESS: 1 Forrest Court NW

DATE: 5/29-84

EXCAVATORS: Artz, Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	--
5-25 cm	10YR3/1	silt loam, granular, with some yellowish brown fill present in lenses; common pebbles	2 pieces bottle glass
25-48 cm	10YR3/1	silt loam, granular, no pebbles	none
48-69 cm	10YR3/1 grading to 2.5Y5/2	silt loam	none
69-80 cm	2.5Y5/2	silt loam	none
80-103 cm	2.5Y5/2 grading to 2.5Y5/4		1 piece bone, 1 tooth fragment, possibly dislodged from higher in profile

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH X SOUTH

TRANSECT: North 4
CORE: 6
LOCATION FROM TRANSECT ORIGIN:
Distance: 29 m
Azimuth: 277°
Elevation: 9.55 m

PROPERTY OWNER: Gust Hangsleben
STREET ADDRESS: 1 Forrest Court NW
DATE: 5/29/84
EXCAVATORS: Artz, Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	--
5-30 cm	10YR3/1	silt loam, granular. In side wall, soil has inclusions of yellowish brown subsoil, pebbles and roots, suggesting it may be fill, or at least mixed, throughout top 30 cm. Many pebbles, chunks of concrete, rotten wood (lumber, not natural) and charcoal.	
30-50 cm	10YR3/1	silt loam, granular. In wall, the disturbed stratum extends from 0-25 cm.	1 brown bottle glass, 1 piece coal slag
50-70 cm	10YR3/1 grading to 2.5Y4/2	silty clay loam	none
70-95 cm	2.5Y4/2 grading to 2.5Y6/4	silt loam, loess-like material	none
95-110 cm	2.5Y6/4 grading to 2.5Y6/6	silt loam, loess-like material	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH X SOUTH

TRANSECT: North 4

CORE: 7

LOCATION FROM TRANSECT ORIGIN:

Distance: 34 m

Azimuth: 277°

Elevation: 9.53 m

PROPERTY OWNER: Gust Hangsleben

STREET ADDRESS: 1 Forrest Court NW

DATE: 5/29/84

EXCAVATORS: Artz/Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	sod layer	--
5-25 cm	10YR3/1	silt loam, granular with abundant historic inclusions	Bone, concrete, glass, brick
25-45 cm	10YR3/1	silt loam, granular	none
Note: In side wall, the disturbed layer is ca. 20 cm thick (0-20 cm below surface.			
45-65 cm	10YR3/1 grading to 2.5Y4/2	silt loam	none
65-85 cm	2.5Y4/2 grading to 2.5Y5/2	silt loam	none
85-105 cm	2.5Y5/2 grading to 2.5Y6/4	silt loam, loess-like material	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH_____ SOUTH X

TRANSECT: Isolated Test

CORE: 1

LOCATION FROM TRANSECT ORIGIN:

Distance:_____

Azimuth:_____

Elevation:_____

PROPERTY OWNER: City of East Grand Forks

STREET ADDRESS:_____

DATE: 5/22/84

EXCAVATORS: Artz, Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-5 cm	--	clean sand and gravel, scattered from stockpilings	none
5-20 cm	10YR2/1	clayey soil, at least 50% small particles of coal and coal slag	glass, metal, asphalt roofing, coal, slag
20-40 cm	10YR2/1	as above, but much less slag	glass, wood, foil metal
40-60 cm	10YR2/1	sandy, loam soil	coal, slag, glass, wood, metal fencing staple
60-70 cm	10YR2/1	sandy soil	at 60 cm, piece of sewer tile

Note: At 70 cm, the sand was too loose to hold in the post-hole digger, so discontinued test

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH _____ SOUTH X

TRANSECT: South 1
CORE: 1
LOCATION FROM TRANSECT ORIGIN:
Distance: 3 m
Azimuth: 186°
Elevation: 9.76 m

PROPERTY OWNER: Robb Boushee
STREET ADDRESS: 104 3rd Ave. NE
DATE: 5/24/85
EXCAVATORS: Artz, Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-20 cm	10YR2/1	no sod; granular silt loam	1 nail
20-41 cm	10YR2/1	granular silt loam	none
41-61 cm	10YR2/1 grading to 2.5Y2/0	silty clay, blocky	none
61-81 cm	2.5Y2/0 grading to 2.5Y3/2	silty clay loam, blocky	none
81-100 cm	2.5Y3/2 grading to 2.5Y4/2	silty clay, blocky	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH _____ SOUTH X

TRANSECT: South 1

CORE: 2

LOCATION FROM TRANSECT ORIGIN:
Distance: 7 m
Azimuth: 186°
Elevation: 9.79 m

PROPERTY OWNER: Robb Boushee

STREET ADDRESS: 104 3rd Ave NE

DATE: 5/24/84

EXCAVATORS: Artz, Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-20 cm	10YR3/1	silt loam, granular	glass, metal fragments
20-45 cm	10YR3/1	silt loam, granular; burned earth in side wall at 21 cm. A clay layer, ca. 1 cm thick in wall is perhaps a cultural feature. Burned earth above it, bone below it, in wall.	mammal skull fragment in wall at 25-35 cm; burned earth, bone recovered in screen
45-60 cm	10YR3/1	silt loam, granular	1 flake, bone, burned earth, nail; not as much bone, burned earth as in 20-45 cm level; material perhaps dislodged from higher in wall.
60-80 cm	2.5Y2/0	silt loam, blocky	bone, 1 possible chipped stone, all perhaps dislodged from above
80-100 cm	2.5Y3/2	silt loam	none

REMARKS: In wall of finished test, the soil above the clay lense at 25 cm below surface is lighter brown, less clayey than soils below lense. The upper 25 cm has many small, orange flecks (burned earth) which are absent below the lense. The upper 25 cm is perhaps fill; the lower is perhaps the original soil.

REMARKS: Adjacent to this test, a second test was excavated to 60 cm. All matrix from this core was saved for waterscreening in lab.

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH _____ SOUTH X

TRANSECT: South 1

CORE: 3 (designated 2.5 in field)

LOCATION FROM TRANSECT ORIGIN:

Distance: 8 m

Azimuth: 186°

Elevation: 9.82 m

PROPERTY OWNER: Robb Boushee

STREET ADDRESS: 104 3rd Ave NE

DATE: 5/25/84

EXCAVATORS: Artz, Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-20 cm	10YR3/1	silty clay loam, granular	tin
20-45 cm	10YR3/1	silty clay loam, granular	glass
45-60 cm	10YR3/1	silty clay loam, granular	none
60-80 cm	10YR3/1	silty clay loma, weak blocky	glass, probably dislodged from side wall

NOTE: At 80 cm, tree roots prevent further excavation, so hole abandoned.

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH _____ SOUTH X

TRANSECT: South 1

CORE: 4

LOCATION FROM TRANSECT ORIGIN:

Distance: 12 m

Azimuth: 186°

Elevation: 9.82 m

PROPERTY OWNER: Robb Boushee

STREET ADDRESS: 104 3rd Ave NE

DATE: 5/25/84

EXCAVATORS: Artz/Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-20 cm	10YR3/1	silty clay loam, granular, some pebble-size gravel	glass
20-40 cm	10YR3/1	silty clay loam, few gravel	glass

NOTE: At 40 cm, hit root, shifted test one diameter to go around it. At 60 cm in the relocated tests, more roots encountered, test abandoned.

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH_____ SOUTH X

NSECT: South 1 PROPERTY OWNER: Robb Boushee

E: 5 STREET ADDRESS: 104 3rd Ave NE

ATION FROM TRANSECT ORIGIN: DATE: 5/25/84

Distance: 20 m EXCAVATORS: Artz, Hayden

Azimuth: 186°

Elevation: 9.74 m

TH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
REMARK: this core is near northeast corner of Boushee house, in a 1 m ide strip between home and a sidewalk.			
-5 cm	--	sod layer	--
-25 cm	10YR3/1	silty clay loam with much gravel	plate glass, nails, coal, bottle glass
5-45 cm	10YR3/1	silty clay loam; less gravel and historic debris than above	slag, burned earth
NOTE: At 50 cm, stopped by root, shifted to avoid it, ½ diameter of test.			
-50 cm	removed as single level from expansion test		
0-60 cm	At 50 cm, encountered a fill of subsoil, topsoil chunks; subsoil yellowish brown, topsoil dark grayish brown		none
0-80 cm	The fill ends between 60 and 70 cm, underlain by a stiff, silty clay with blocky structure, 2.5Y2/0, probably undisturbed sediment		none
0-94 cm	2.5Y2/0 grading to 2.5Y4/2	silty clay, blocky; mottled with 2.5Y3/1; clay skins present; some faint, yellowish brown mottles (iron staining)	none
NOTE: Root encountered at 94 cm, test abandoned.			

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH _____ SOUTH X

ANSECT: South 1 PROPERTY OWNER: Rob Boushee

RE: 6 STREET ADDRESS: 104 3rd Ave NE

CATION FROM TRANSECT ORIGIN: DATE: 5-25-84

Distance: 25 m EXCAVATORS: Artz, Hayden

Azimuth: 186°

Elevation: 9.52 m

EPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-18 cm	10YR3/1	a topsoil fill unit	none
18-28 cm	2.5Y4/2	silty clay, a distinct layer, full of historic artifacts	crockery, glass, concrete, metal, electrical parts
28-40 cm	10YR3/1	silty clay loam, granular	few artifacts
40-60 cm	2.5Y4/2	friable silt loam, like subsoil encountered in Transect 2	glass, probably dislodged from higher in wall
60-85 cm	2.5Y4/2	friable silt loam	see note, below

NOTE: In wall of test, between 66 and 70 cm, is a lense of charcoal and rusted metal, including two long "pole barn" nails. The charcoal is fine and fibrous, like burned wood sometimes appears. The presence of this lense suggests that all above it is fill. I believe all material from this level is from the lense.

85-110 cm	2.5Y4/2	friable silt loam. A large chunk contained, in situ, a brick fragment, so the soil in this level is identified as fill	2 chunks of brick

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH _____ SOUTH x

ECT: South 1

7

ION FROM TRANSECT ORIGIN:

Distance: 30 m

Azimuth: 186°

Elevation: 8.91 m

PROPERTY OWNER: Robb Boushee

STREET ADDRESS: 104 3rd Ave NE

DATE: 5/25/84

EXCAVATORS: Artz, Hayden

(cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
3 cm	A yellowish brown fill with coal slag, cement, glass, brad fastener; many pebbles in fill		
36 cm	10YR3/1	silty clay loam	1 piece slag
60 cm	2.5Y4/2	silt loam fill; a lense of clean sand full of artifacts is between 36 and 40 cm, at top of this level	1967 dime
NOTE: A brick encountered at 60 cm forced expansion of test			
85 cm	2.5Y4/2 silt loam fill with artifacts		
100 cm	7.5YR5/8	fine sand associated with fused sand and charcoal, perhaps slag from brickyard? Sand is loose, single grain. A chunk of concrete rubble at 85 cm, just above sand.	

AD-A152 416 A CULTURAL RESOURCE RECONNAISSANCE OF TWO PROPOSED BANK UNLOADING AREAS E..(U) NORTH DAKOTA UNIV GRAND FORKS DEPT OF ANTHROPOLOGY AND ARCHAE.. J A ARTZ DEC 84 2/2

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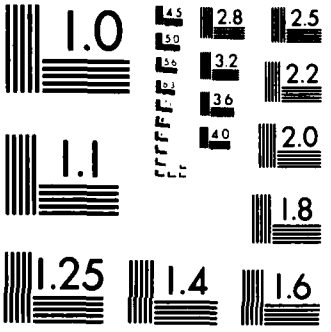


UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH _____ SOUTH x

TRANSECT: South 1

CORE: 7

LOCATION FROM TRANSECT ORIGIN:

Distance: 30 m

Azimuth: 186°

Elevation: 8.91 m

PROPERTY OWNER: Robb Boushee

STREET ADDRESS: 104 3rd Ave NE

DATE: 5/25/84

EXCAVATORS: Artz, Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-18 cm	A yellowish brown fill with coal slag, cement, glass, brad fastener; many pebbles in fill		
18-36 cm	10YR3/1	silty clay loam	1 piece slag
36-60 cm	2.5Y4/2	silt loam fill; a lense of clean sand full of artifacts is between 36 and 40 cm, at top of this level	1967 dime
NOTE: A brick encountered at 60 cm forced expansion of test			
65-85 cm	2.5Y4/2 silt loam fill with artifacts		
85-100 cm	7.5YR5/8	fine sand associated with fused sand and charcoal, perhaps slag from brickyard? Sand is loose, single grain. A chunk of concrete rubble at 85 cm, just above sand.	

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH _____ SOUTH X

TRANSECT: South 2

CORE: 1

LOCATION FROM TRANSECT ORIGIN:

Distance: 5 m

Azimuth: 269°

Elevation: 9.90 m

PROPERTY OWNER: Robb Boushee

STREET ADDRESS: 104 3rd Ave NE

DATE: 5-25-84

EXCAVATORS: Hayden, Artz

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-20 cm	10YR2/1	silty clay loam, granular many pebbles	none
20-42 cm	10YR2/1	silty clay loam, blocky, breaking to granular; many pebbles	1 brick or burned earth fragment
42-61 cm	10YR2/1 grading to 10YR3/1	silty clay loam, blocky breaking to granular	none
61-80 cm	10YR3/1	silty clay loam, blocky breaking to granular	one piece brown glass
80-100 cm	10YR3/1	clay loam, blocky; thin, discontinuous clay skins	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH _____ SOUTH X

TRANSECT: South 2

CORE: 2

LOCATION FROM TRANSECT ORIGIN:

Distance: 10 m

Azimuth: 269°

Elevation: 9.70 m

PROPERTY OWNER: Robb Boushee

STREET ADDRESS: 104 3rd Ave NE

DATE: 5-25-84

EXCAVATORS: Hayden, Artz

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-20 cm	10YR3/1	silty clay loam, granular	metal, glass
20-40 cm	10YR3/1	silty clay loam, granular	crockery fragment
40-61 cm	10YR3/1 grading to 10YR4/1	silty clay loam, becoming clayier with depth	none
61-81 cm	10YR4/1 grading to 2.5Y4/2	silty clay loam, grading to mottled clay loam	none
81-100 cm	2.5Y4/2	clay loam	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH _____ SOUTH X

TRANSECT: South 2

CORE: 3

LOCATION FROM TRANSECT ORIGIN:

Distance: 15 m

Azimuth: 269°

Elevation: 9.79 m

PROPERTY OWNER: Robb Boushee

STREET ADDRESS: 104 3rd Ave NE

DATE: 5/25/84

EXCAVATORS: Artz, Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-20 cm	10YR2/1	silty clay loam, granular	none
20-40 cm	10YR2/1 grading to 10YR3/3	silty clay loam, granular	bone, one possible flake
40-60 cm	10YR3/1		none
60-80 cm	2.5Y4/2 clay loam changing to 2.5Y5/2 silt loam, friable		none
80-100 cm	2.5Y5/2	friable silt loam	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH _____ SOUTH X

TRANSECT: South 2

CORE: 4

LOCATION FROM TRANSECT ORIGIN:

Distance: 20 m

Azimuth: 269°

Elevation: 9.84 m

PROPERTY OWNER: Robb Boushee

STREET ADDRESS: 103 3rd Ave NE

DATE: 5/25/85

EXCAVATORS: Artz/Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-20 cm	10YR3/1	silty clay loam, granular	none
20-45 cm	10YR3/1	silty clay loam, granular	none
45-65 cm	10YR3/1	silty clay loam, granular	none
65-85 cm	10YR3/1	silty clay loam, granular	none
85-105 cm	2.5Y5/2	friable silt loam encountered at 95 cm	none

UNIVERSITY OF NORTH DAKOTA
EAST GRAND FORKS ARCHEOLOGICAL SURVEY

AREA: NORTH _____ SOUTH X

TRANSECT: South 2

CORE: 5

LOCATION FROM TRANSECT ORIGIN:

Distance: 25 m

Azimuth: 269°

Elevation: not taken

PROPERTY OWNER: Robb Boushee

STREET ADDRESS: 104 3rd Ave NE

DATE: 5/25/85'

EXCAVATORS: Artz/Hayden

DEPTH (cm)	MUNSELL COLOR	DESCRIPTION OF SOIL/SEDIMENTS	CULTURAL MATERIAL
0-15 cm		Dark gray topsoil, compacted due to proximity to driveway	none
15-35 cm		Road fill--much gravel, glass, probably from construction of 3rd Ave NE	
35-55 cm	10YR3/2	loam; undisturbed soil, no gravel	none
55-85 cm	grayish brown	silt loam, friable	none
85-100 cm	2.5Y4/2	silt loam, friable	none

APPENDIX B

ARCHEOLOGICAL SITE FORM

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
Polk	Grand Forks Lumber Company Saw Mill	UND 84-1	21PL17

OWNER Site includes portions of three lots owned by: City of East Grand Forks; Holweger Excavation Company; Mr. Robert Boushee (104 3rd Ave. NE, East Grand Forks)

U.S.G.S. QUAD 7.5 min; Grand Forks

SITE LOCATION In E. Grand Forks, MN, east of 3rd Ave. NE and west of former city water plant, between 2nd Ave SE and the Red Lake River.

LEGAL DESCRIPTION SW¼ NE¼ SW¼ section 1 T. 151N R. 50W twnsp: Rhinehart

SITE TYPE Euro-American industrial; E.A. land fill; prehistoric campsite

PROBABLE CULTURAL COMPONENTS: Euro-American sawmill (1899-1911); dump (post 1920 (?); unidentified prehistoric component

SITE DESCRIPTION / ENVIRONMENTAL SETTING
Site is located at edge of terrace above Red Lake River, within city limits of EGF.

SITE CONDITION	CURRENT LAND USE	SITE AREA
Extensively modified by 20th century landfill, much of which post-dates 1950. Small areas of undisturbed site exist	Boushee residence in west 1/3; garage and equipment parking in center area (Holweger); city stockpiles sand and earth on the east 1/3	35.6 acres 14.4 ha

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
Permanent (Red Lake River)	On bank of Red Lake River	North

ELEVATION OF SITE: range= 800-830 ft AMSL **ELEVATION OF NEAREST WATER:** 800 ft AMSL

NATURE, EXTENT OF INVESTIGATION: Documents search; 13 posthole digger tests; surface walk over

ARTIFACTS OBSERVED, RECOVERED: Large quantities of historic debris, principally construction rubble (concrete, gravel) and domestic refuse on surface and in subsurface tests; 1 chalcedony flake and 1 deer skull fragment recovered in subsurface tests.

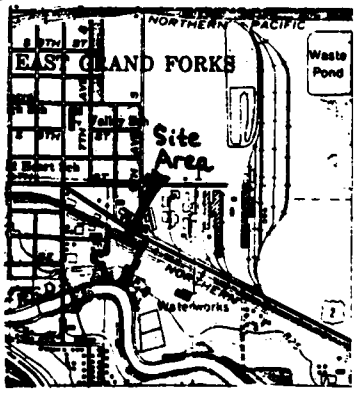
LOCAL COLLECTIONS, INFORMANTS:
Gary Sanders, consulting engineer for city of EGF, concerning use of site as a dumping ground

WRITTEN REFERENCES Artz, J.A. (1984) Cultural Resource Reconnaissance of Proposed Bank Unloading Areas, EGF, MN. UND Dept. Anthro/Arch, Grand Forks, ND

COMMENTS:
Site recorded during survey for St. Paul District, Corps of Engineers.

MAP SCALE: 1:24,000

MAP



ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
		Dept. of Anthro/Arch., Univ. North Dakota, Grand Forks, ND	Joe Alan Artz DATE: June 1984

SITE CONTINUATION FORM: SKETCH MAP

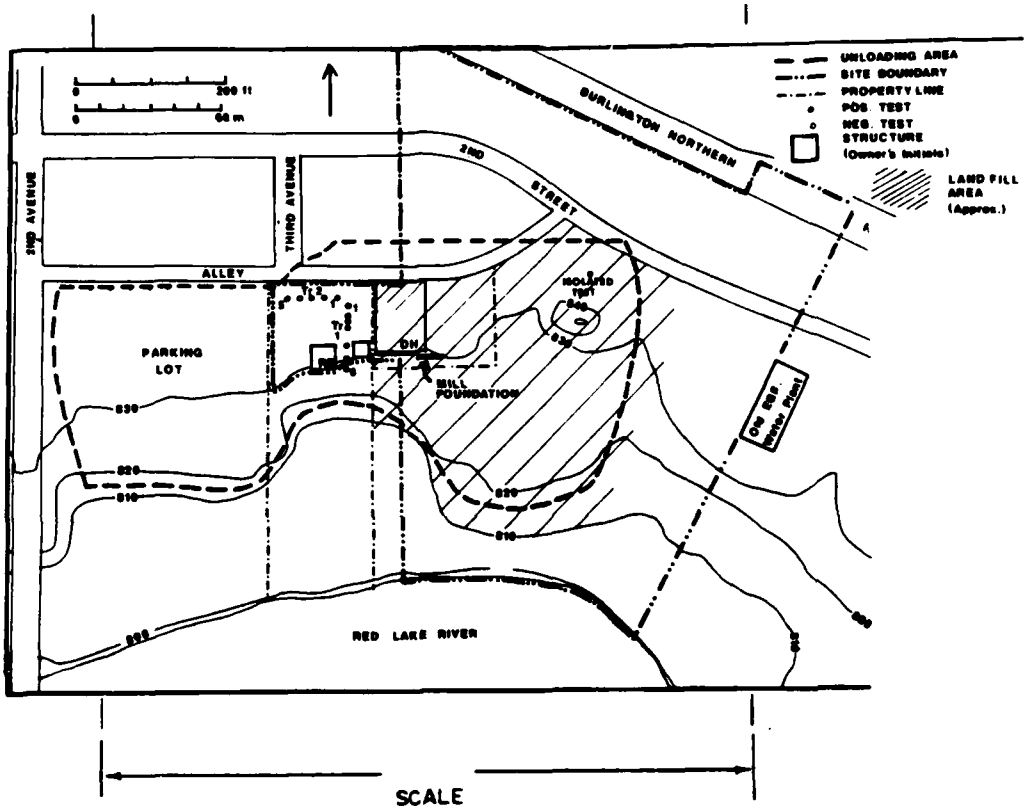
KEY:

STATE SITE NO. 21PL17

FIELD NO. UND 84-1

LEGAL DESCRIPTION $SW\frac{1}{4}NE\frac{1}{4}SW\frac{1}{4}$ sec. 1

T. 151N R. 50W twnsp: Rhinehart



SCALE

COMMENTS:

Recorder Joe Alan Artz Date 8/7/84

END

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